

The UNIVERSITY OF ARKANSAS BULLETIN

Volume IX, June, 1915, Number 1

THE
University of Arkansas
Catalogue

1914-1915

Announcement for

1915-1916

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THE UNIVERSITY CALENDAR

1915-1916

1915

September 15-18,

Entrance examinations and
registration

September 20, Monday,

Instruction begins

November 25, 26,

Thanksgiving recess

December 17-January 4,

Christmas vacation

1916

January 22, Saturday,

Midyear examinations begin

January 29, Saturday,

First semester closes

January 31, Monday,

Second semester begins

May 27, Saturday,

Second semester examinations
begin

June 4, Sunday,

Baccalaureate sermon

June 7, Wednesday

Commencement day

BOARD OF TRUSTEES

<i>The Governor of Arkansas</i> -----	<i>Ex-Officio</i>
GEORGE W. HAYS-----	Little Rock
<i>The State Superintendent of Public Instruction</i> -----	<i>Ex-Officio</i>
GEORGE B. COOK-----	Little Rock

Date of Expiration of Term

C. C. REID, Little Rock-----	(Resigned July, 1914)
W. H. ASKEW, Magnolia-----	(Died November, 1914)
CHARLES RICHARDSON, Fayetteville-----	March, 1915
T. A. TURNER, Jonesboro-----	March, 1915
A. B. BANKS, Fordyce-----	1917
FRANK PACE, Little Rock-----	1917
J. D. HEAD, Texarkana-----	1919
J. K. MAHONY, El Dorado-----	1919
H. L. PONDER, Walnut Ridge-----	1919
JAMES K. BROWNING, Piggott-----	1921
Z. L. REAGAN, Fayetteville-----	1921

OFFICERS OF THE BOARD

Chairman-----	Governor GEORGE W. HAYS
Secretary and Auditor-----	WILLIAM H. CRAVENS, Fayetteville

COMMITTEES OF THE BOARD

Executive Committee—Governor Hays, Chairman; Messrs. Mahony, Pace and Reagan.

Finance Committee—Mr. Banks, Chairman; Messrs. Head and Reagan.

Teachers' Committee—Mr. Cook, Chairman; Messrs. Mahony and Head.

College of Agriculture—Mr. Browning, Chairman; Messrs. Ponder and Pace.

Buildings and Grounds—Mr. Ponder, Chairman; Messrs. Reagan and Browning.

Branch Normal School—Mr. Cook, Chairman; Messrs. Banks and Mahony.

Medical College—Mr. Cook, Chairman; Messrs. Head and Ponder.

Board of Control of the Agricultural Experiment Station—The Committee on the College of Agriculture, the President of the University, the Director of the Station.

OFFICERS OF ADMINISTRATION AND CORPS OF INSTRUCTORS

JOHN CLINTON FUTRALL, B. A. (University of Virginia, 1894),
M. A. (ibid., 1894)-----226 N. College Ave.
President of the University

THE UNIVERSITY COUNCIL

This body is composed of the President, the Deans of the several colleges, and Professors DROKE, KNOCH, LASSETTER and RIPLEY.

OTHER OFFICERS OF ADMINISTRATION

WILLIAM HAMPTON CRAVENS, *Secretary of the Board of Trustees and Auditor of the University*

FRED W. BOSCHEN, First Lieutenant Seventeenth Infantry,
U. S. A., *Commandant*

MARY DAVIS, *Dean of Women*

BURR WALTER TORREYSON, *Professor of Secondary Education*

JULIA VAULX, B. A. (University of Arkansas), A. M. (Cornell University), *Librarian*

BIRTON NEIL WILSON, M. E., *Superintendent of Mechanic Arts*

NOAH FIELDS DRAKE, Ph. D., *Curator of the Museum*

SUNDRY OTHER OFFICERS

BRUCE WESLEY DICKSON, M. A., (University of Arkansas, 1912),
Secretary of the Young Men's Christian Association

MARGARET WILSON, B. A., (Park College, 1910)-----Carnall Hall
Secretary of the Young Women's Christian Association

MRS. F. S. PARKE-----Carnall Hall
Superintendent of Carnall Hall

MRS. JESSIE BLOCKER WARNER-----Hill Hall
Superintendent of Men's Dormitories

EARLE THOMAS PICKERING, LL. B. (University of Minnesota),
Director of Physical Culture and Athletics

THE UNIVERSITY SENATE

This body consists of the President, the Deans of the several colleges, the Dean of Women, and all heads of departments and professors in the colleges.

FACULTY LISTS

Note.—The first date after a title indicates the year of appointment to present rank; the second date, the year of first appointment to any position in the University. Where both appointments coincide, one date only appears.

THE COLLEGE OF ARTS AND SCIENCES

GEORGE WESLEY DROKE, A. B. (University of Arkansas), A. M.
(*ibid.*) -----103 Hill Street
*Dean of the College of Arts and Sciences, Professor of
Mathematics and Astronomy, 1915, 1891*

MARY CUMMINGS BATEMAN-----327 Washington Avenue
Instructor in Vocal Music, 1905

MABEL BELL-----Spring Street
Instructor in Piano, 1909

*ROSE BLAND, B. A. (University of Illinois)
Assistant Professor of Education

WALTER MATTHEW BRISCOE, A. B. (Ouachita College)
Professor of German, 1911 619 Ida Avenue

CHARLES HILLMAN BROUGH, B. A. (Mississippi College), M. A.
(*ibid.*), LL. B., (University of Mississippi), Ph. D. (Johns
Hopkins University)-----312 North College Avenue
Professor of Economics and Sociology, 1903

BERNARD BROWN, B. A. (University of Nashville), M. S. (Uni-
versity of Chicago)-----924 West Maple Street
Instructor in Physics, 1914

*NEIL CAROTHERS, B. A. (University of Arkansas), Diploma in
Economics (Oxon.)
Associate Professor of Economics, 1909, 1907

*Absent on leave, 1914-15.

- CHARLES GEIGER CARROLL, B. A. (Southwestern University),
M. A. (ibid.), Ph. D. (Johns Hopkins University)
Professor of Chemistry, 1905 732 West Maple Street
- WILLIE VANDEVENTER CROCKETT-----318 Lafayette Avenue
Instructor in Expression, 1905
- NOAH FIELDS DRAKE, C. E. (University of Arkansas), A. B. (Le-
land Stanford University), A. M. (ibid.), Ph. D. (ibid.)
513 North Highland Avenue
Professor of Geology and Mining, 1912
- BOLLING JAMES DUNN, B. A. (Bethel College)
116 South Church Street
Associate Professor of Mathematics, 1898, 1894
- JOHN WAINWRIGHT EVANS, B. A. (Princeton University)
Instructor in English, 1912
- ELIZABETH GALBRAITH, B. A. (West Tennessee Christian Col-
lege)-----403 Lafayette Avenue
Instructor in Art, 1906
- JAMES RICHARD GRANT, B. A. (University of Arkansas), Ph. B.
(Northern Illinois Normal College), M. A. (University of
Chicago) -----Buchanan Avenue
*Assistant Professor of Philosophy and Acting Director of
the Training School*, 1914, 1912
- ARTHUR MCCracken HARDING, B. A. (University of Arkansas),
A. M. (University of Chicago)-----537 Leverett Street
Associate Professor of Mathematics, 1907, 1905
- MARY GARNETT HARGIS-----324 Washington Avenue
Instructor in Romance Languages, 1910, 1900
- FRANK CLAYBOURNE HAWKINS, B. A. (University of Arkansas)
Adjunct Professor of Ancient Languages, 1909
- JOELLE HOLCOMBE, B. A. (University of Arkansas), M. A. (Cor-
nell University)-----104 North College Avenue
Instructor in English, 1914, 1907
- JAMES RALPH JEWELL, B. A. (Coe College), M. A. (Coe College),
Ph. D. (Clark University)-----538 Leverett Street
*Dean of the School of Education, Professor of Educa-
tion*, 1913
- ARTHUR MELVILLE JORDAN, A. B. (Randolph Macon College),
A. M. (Trinity College, North Carolina)--620 Reagan Street
Assistant Professor of Psychology, 1914

- MAX CARL GUENTHER LENTZ-----369 Gregg Street
Associate Professor of German, 1906
- ANTONIO MARINONI, A. B. (Liceo of Desenzano), A. M. (Yale University) -----Ida Avenue
Professor of Romance Languages, 1907, 1905
- EVELYN J. METZGER-----403 Lafayette Avenue
Instructor in Art, 1910
- CLARA MILLER, Ph. B. (University of Chicago)
 402 Arkansas Avenue
Instructor in Physical Education, 1912
- OWEN MITCHELL-----Block Street
Instructor in Piano and Harmony, 1912
- HUGH ELLIS MORROW, B. S. A. (University of Arkansas)
 512 Leverett Street
Associate Professor of Chemistry, 1907, 1904
- WALLACE CARL MURPHY, B. A. (University of Arkansas), M. A. (University of Chicago)
Associate Professor of History and Political Science, 1913
- EUNICE OATES
Instructor in the History of Music, 1914
- FRANK WELLBORN PICKEL, A. B. (Furman University), M. S. (University of South Carolina), M. Sc. (University of Chicago)-----808 West Maple Street
Professor of Biology, 1899
- GILES EMMET RIPLEY, B. S. (Purdue University), M. S. (ibid.)
 95 South Duncan Street
Professor of Physics, 1908
- MABEL SANBORN-----402 Arkansas Avenue
Instructor in Education, 1912
- BENJAMIN SCHWARTZ, B. A. (College of the City of New York), M. A. (Columbia University)
Instructor in Biology, 1913
- KATE WITHERS SIMPSON-----244 North East Street
Instructor in Education, 1913
- HENRY HARRISON STRAUSS, A. B. (University of Wooster), A. M. (Tulane University)-----358 Arkansas Avenue
Professor of Ancient Languages, 1915, 1913

- DAVID YANCEY THOMAS, B. A. (Emory College), M. A., (Vanderbilt University), Ph. D. (Columbia University)
110 Fairview Avenue
Professor of History and Political Science, 1912, 1907
- HENRY DOUGHTY TOVEY-----614 Ida Avenue
Professor of Music, 1908
- JOHN SIDNEY TURNER, B. A. (Cantab.)
Instructor in Mathematics, 1912
- ROOSEVELT PRUYN WALKER, B. A. (Mercer University), M. A. (Yale University)
Instructor in English, 1912
- JULIAN SEESSEL WATERMAN, B. A. (Tulane University), M. A. (University of Michigan)-----358 Arkansas Avenue
Associate Professor of Economics, 1914
- CURTIS T. WILLIAMS, B. A. (Kansas State Normal College), M. A. (Clark University)
Instructor in English, 1914
- ROGER WILLIAMS, B. A. (Ouachita College), M. A. (Harvard University)-----304 North College Avenue
Assistant Professor of English, 1914, 1911

THE SCHOOL OF EDUCATION

- JAMES RALPH JEWELL, B. A. (Coe College), M. A. (Coe College), Ph. D. (Clark University)-----538 Leverett Street
Dean of the School of Education, Professor of Education, 1913
- *ROSE BLAND, B. A. (University of Illinois)
Assistant Professor of Education
- JAMES RICHARD GRANT, B. A. (University of Arkansas), Ph. B. (Northern Illinois Normal College), M. A. (University of Chicago)-----Buchanan Avenue
Assistant Professor of Philosophy and Acting Director of the Training School, 1914, 1912
- ARTHUR MELVILLE JORDAN, A. B. (Randolph Macon College), A. M. (Trinity College, North Carolina)---620 Reagan Street
Assistant Professor of Psychology, 1914

*Absent on leave 1914-15.

- MABEL SANBORN-----402 Arkansas Avenue
Instructor in Education, 1912
- KATE WITHERS SIMPSON-----244 North East Street
Instructor in Education, 1913
- B. W. TORREYSON
Professor of Secondary Education and High School Examiner

THE COLLEGE OF ENGINEERING

- WILLIAM NATHAN GLADSON, B. M. E. (Iowa State College),
 E. E. (ibid.), Ph. D. (McLeanorsville College)
 820 West Maple Street
Dean of the College of Engineering, Professor of Electrical Engineering, 1913, 1894
- DORAF W. BLAKESLEE, B. S. E. E. (Highland Park College),
 E. E. (ibid.)
Instructor in Electrical Engineering, 1914
- SAMUEL SPENCE BUCKLEY, B. C. E. (University of Arkansas)
 346 Arkansas Avenue
Instructor in Civil Engineering, 1913
- CHARLES GEIGER CARROLL, B. A. (Southwestern University),
 M. A. (ibid.), Ph. D. (Johns Hopkins University)
 732 West Maple Street
Professor of Chemistry, 1905
- HERMAN WAKEMAN DEAN-----314 Mountain Street
Instructor in Mechanical Engineering, 1907
- NOAH FIELDS DRAKE, C. E. (University of Arkansas), A. B.
 (Leland Stanford University), M. A. (ibid.), Ph. D. (ibid.)
 513 North Highland Avenue
Professor of Geology and Mining, 1912
- WILLIAM EDGAR DUCKWORTH-----367 North Gregg Street
Instructor in Mechanical Engineering, 1909
- JULIUS JAMES KNOCH, B. S. (Grove City College), M. S. (ibid.),
 C. E. (Cornell University)-----402 North College Avenue
Professor of Civil Engineering, 1896, 1893
- VIRGIL PROCTOR KNOTT, B. C. E. (University of Arkansas)
 125 North East Street
Associate Professor of Civil Engineering, 1904

- BRAINERD MITCHELL, JR., B. M. E. (University of Arkansas),
M. E. (ibid.)-----South Duncan Street
Assistant Professor of Mechanical Engineering, 1905
- GILES EMMET RIPLEY, B. S. (Purdue University), M. S. (ibid.)
108 South Duncan Street
Professor of Physics, 1908
- WILLIAM BOYD STELZNER, B. E. E. (University of Arkansas),
E. E. (ibid.)-----222 North College Avenue
Adjunct Professor of Electrical Engineering, 1909
- ROGER WILLIAMS, B. A. (Ouachita College), M. A. (Harvard
University)-----304 North College Avenue
Assistant Professor of English, 1914, 1911
- BIRTON NEILL WILSON, B. S. M. E. (Georgia School of Tech-
nology), M. E. (University of Michigan)
241 North College Avenue
*Professor of Mechanical Engineering, Superintendent of
Mechanic Arts, 1903, 1896*

THE COLLEGE OF AGRICULTURE

- *MARTIN NELSON, B. S. A. (University of Wisconsin), M. S.
(ibid.)-----603 Highland Avenue
*Dean of the College of Agriculture, Director of the Ex-
periment Station, 1913, 1908*
- FRAN ERLING ANDERSON, B. A. (Oberlin College)
215 East Dickson Street
Assistant in Extension, 1914
- MARCELLA ARTHUR, B. S. (Stout Institute)
318 East Lafayette Avenue
Instructor in Home Economics (Extension), 1914
- *MAYBIN STEELE BAKER, B. S. A. (University of Arkansas)
205 North Church Street
Assistant in Agronomy, 1914
- *GEORGE GROVER BECKER, B. S. A. (Cornell University)
328 North College Avenue
Assistant Professor of Entomology, 1914, 1910
- JOHN MALLORY BORDERS, B. S. A. (University of Arkansas)
120 West Spring Street
Instructor in Extension, 1910

- *DE HELLIK BRANSON, B. S. A. (Kansas State Agricultural College)-----331 Highland Avenue
Instructor in Animal Husbandry, 1913
- CHARLES GEIGER CARROLL, B. A. (Southwestern University),
M. A. (ibid.), Ph. D. (Johns Hopkins University)
732 West Maple Street
Professor of Chemistry, 1905
- *HENRY EDMUND DVORACHEK, B. S. A. (University of Minnesota)-----325 Highland Avenue
Professor of Animal Husbandry, 1915
- *WALTER SAMUEL FIELDS, B. S. (Michigan Agricultural College)
416 North College Avenue
Assistant in Plant Pathology, 1913
- *ROLAND M. GOW, D. V. M. (Ohio State University)
628 Maple Street
Assistant Professor of Veterinary Science, 1914, 1909
- *JOSEPH LEE HEWITT, B. S. A. (University of Missouri)
Professor of Plant Pathology
- *DE FOREST HUNGERFORD, B. S. (Kansas Agricultural College),
M. S. (University of Minnesota)--318 East Lafayette Avenue
Assistant Professor of Agronomy, 1915
- EARL KILPATRICK, B. S. (Oklahoma Agricultural and Mechanical College)-----420 North College Avenue
Instructor in Agronomy (Extension) 1914
- JOHN SAMUEL KNOX, B. S. A. (Clemson College), M. S. A.
(University of Idaho)-----310 Willow Street
Instructor in Horticulture, 1914
- *WILLIAM CASPER LASSETTER, B. S. A. (University of Wisconsin)
225 North College Avenue
*Assistant Professor of Agronomy, Director of Extension,
1914, 1910*
- *CLIFFORD LESLIE MCARTHUR, B. S. (Oklahoma Agricultural and Mechanical College), M. S. (University of Idaho)
511 Willow Street
Instructor in Animal Pathology, 1914, 1912
- MARY ELIZABETH METZGER, Diploma in Home Economics (Milwaukee Downer College)-----403 Lafayette Avenue
Instructor in Home Economics, 1914

LYNN WESLEY OSBORN, B. S. A. (Iowa State College)
416 North College Avenue

Instructor in Agronomy, 1914, 1913

SARAH PETTIT, B. S. (Columbia University)
601 Highland Avenue

Instructor in Home Economics, in charge of the department, 1913

GEORGE STRICKLAND, B. S. A. (University of Arkansas)
Assistant in Agronomy (Soil Survey), 1914

*RAYMOND CHARLES THOMPSON, B. S. (Kansas State Agricultural College)-----601 Highland Avenue
Professor of Agricultural Chemistry, 1912, 1910

*HARTLEY EUGENE TRUAX, B. S. (Michigan Agricultural College)
356 North College Avenue
Instructor in Horticulture, 1913, 1912

*JUSTIN RANDOLPH TUCKER, B. S. A. (University of Arkansas)
158 Hill Street
Instructor in Agricultural Chemistry, 1909

WALTER RAY WHELOCK, B. S. A. (Ohio State University)
218 Sutton Street
Assistant Professor in Extension Service, 1913

*WILLIAM HALE WICKS, B. S. A. (Oregon Agricultural College),
M. S. (ibid.), M. S. A. (Cornell University)
Professor of Horticulture, 1914-----629 Maple Street

BIRTON NEILL WILSON, B. S. M. E. (Georgia School of Technology), M. E. (University of Michigan)
241 North College Avenue
Professor of Mechanical Engineering, Superintendent of Mechanic Arts, 1903, 1896

*Absent on leave 1914-15.

THE STAFF OF THE AGRICULTURAL EXPERIMENT STATION

MARTIN NELSON, B. S. A., M. S., *Director*

The staff is made up of those members of the College of Agriculture whose names are starred in the foregoing list.

STANDING COMMITTEES OF THE UNIVERSITY
SENATE

Athletic Board—Professors Gladson, Marinoni, Wilson, Droke, Mr. Pickering.

Commencement—Professors Brough, Wheelock, Pickel, Tovey, Grant, Mrs. Crockett, Mr. Dickson.

Schedule—Professors Wilson, Briscoe, Strauss, Lassetter, Morrow.

Accredited Schools—Professors Thomas, Jewell, Hewitt, Harding, Miss Holcombe.

Extension—Professors Marinoni, Jewell, Gladson, Nelson, Grant.

Statistics—Professors Ripley, Thompson, Mitchell, Stelzner, Morrow, Mr. Brown, Mr. Schwartz.

Graduate Studies—Professors Jewell, Knoch, Carroll, Nelson, Marinoni.

Advisers—Deans Nelson, Gladson, Jewell, Professors Brough, Ripley, Drake.

Honorary and Higher Degrees—Professors Droke, Wicks, Pickel, Hewitt, Murphy, Knott.

Student Affairs—Professors Gladson, Dunn, Jordan, Miss Davis, Mr. Turner, Mr. Tovey.

Discipline—Professors Drake, Gladson, Boschen, Briscoe, Jewell.

Honors—Professors Knoch, Thompson, Hawkins, Mr. Walker, Mr. C. T. Williams.

Student Organization—Professors Carroll, Brough, Strauss, Knoch, Lentz.

Catalogue—Professors Lassetter, Wilson, Ripley, R. Williams, Mr. Walker.

Library—Professors Drake, Fowler, Murphy, Mr. Evans, Miss Vault.

Student Publications—Professors Boschen, Lassetter, Morrow, Waterman, Mr. Evans.

THE UNIVERSITY TOWN

The University of Arkansas is situated in Fayetteville, Washington County, in the northwestern part of the state, in the heart of the Ozark Mountains. The elevation of the town is in the neighborhood of 1,500 feet. The surroundings are of great natural beauty, and the climate of the region is excellent.

Fayetteville may be reached both from the north and from the south by the Texas branch of the St. Louis & San Francisco ("Frisco") Railroad. The Muskogee division communicates with the west.

The moral and religious conditions of the community are most favorable. There are fourteen churches in the town, representing nine denominations. The pastors of these churches actively interest themselves in the moral and spiritual welfare of the students.

By an act of the general assembly of the state, the liquor traffic has been barred from Fayetteville. Intoxicating liquors cannot be sold or given away within five miles of the University.

SUMMER SCHOOL

The sixth Summer Session of the University will open on June 14, 1915, and close on July 24.

The courses offered in the Summer Session will be of grammar school, high school and collegiate grade. There will be a practice school for demonstration of methods in primary school work. This summer, for the first time, practice teaching may be done for college credit, in either primary, grammar school or high school subjects.

The high school and college courses will be given by members of the corps of instructors of the University.

More detailed information regarding the Summer Session may be had from the Summer Session Bulletin, which will be sent on application.

GENERAL INFORMATION

HISTORY

The University of Arkansas owes its origin to an Act of Congress, approved July 2, 1862, providing that public lands should be granted to the several states, to the amount of "30,000 acres for each senator and representative in Congress," from the sale of which there should be established a perpetual fund, "the interest of which shall be inviolably appropriated by each state, which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislature of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." This act forbids the use of any portion of the aforesaid fund, or the interest thereon, for the purchase, erection, or maintenance of any building or buildings. The states accepting the provisions of the act are required to provide for the construction and maintenance of the necessary buildings, and for the expenses of administration in carrying out the purposes of the act.

The general assembly of the state of Arkansas accepted the national law by passing an act, approved March 27, 1871, which provided for the location, organization and maintenance of the University of Arkansas.

Fayetteville, Washington County, was selected as the seat of the University and the institution opened on January 22, 1872.

The Experiment Station owes its origin to an act of Congress of March 2, 1887 (the Hatch Act), under which act the University receives \$15,000 annually for the maintenance of the experiment station, "to aid in acquiring and diffusing among the people useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." In 1906 the congress passed an act increasing this appropriation by the sum of \$5,000 the first year, and providing for

an additional increase of \$2,000 per annum, until such increased appropriation reaches \$15,000 annually.

Under an act of Congress, approved August 30, 1890, the University receives \$25,000 annually, "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their application to the industries of life."

On March 4, 1907, the Congress passed an act increasing this appropriation at the rate of \$5,000 per annum, until the total amount appropriated annually reaches \$50,000.

The present divisions of the University of Arkansas at Fayetteville are: the College of Agriculture, the College of Arts and Sciences, the College of Engineering, and the School of Education. The Summer Session of the University was inaugurated in 1910.

EQUIPMENT

BUILDINGS AND GROUNDS

The land occupied by the University and its various departments comprises about 120 acres.

There are at present some fifteen buildings on the campus. The value of these, exclusive of equipment, approximates \$800,000.

The buildings are heated by steam, lighted by electricity, and supplied with water from the city waterworks.

Descriptions of the buildings used by the several colleges will be found in the sections of this catalogue devoted to these colleges. Other University buildings are as follows:

The University Infirmary. This is a one and one-half story brick building. The Infirmary has an open ward for men and one for women, a private ward for men and one for women, and a well isolated contagious ward.

Dormitories. There are three dormitories for men. *Buchanan Hall* is a three-story brick structure and contains some 40 rooms. *Hill Hall*, named in honor of Lieutenant-general D. H. Hill, C. S. A., who served as president of the University from 1877 to 1884, was erected in 1901. It is a three-story brick structure, and besides a dining hall, kitchen, store-rooms, etc., contains about

20 rooms for students. *Gray Hall*, erected in 1905, was named in honor of Colonel O. C. Gray, C. S. A., sometime professor of mathematics in the University. The building is two stories in height, is built of brick, and is 176 feet in length by 92 feet in depth. It contains 68 student rooms and will accommodate 136 students.

The dormitory for young women, *Carnall Hall*, erected in 1905, was named in honor of Miss Ella Carnall, Ph. M., sometime associate professor of English and modern languages in the University. The building has three stories, and has a frontage of 190 feet and a depth of 106 feet. Besides parlors, a dining room and a recreation room, it contains rooms sufficient to accommodate about 100 students.

LIBRARY

The general library which so long occupied the second floor of the north wing of University Hall, has been moved to the first floor of the south wing of University Hall. This new position better enables the library to be braced from below so as to insure against breaking of the floor beams, and also provides better for the expansion of the library. The walls of the new library room have been appropriately decorated, a new floor laid, and electric wiring for lighting installed. Steel stacks and other library fixtures will be added as means are available for completing the room.

During 1913 most of the unbound volumes of important magazines belonging to the library were bound. These, with new purchases of books, had added about 2,000 new volumes to the library. The total number of volumes in the library is about 20,000 bound and 2,000 unbound volumes, exclusive of government publications.

Besides the general library there are libraries belonging to colleges and departments of the University which if added to the general library would make a total of about 30,000 bound and probably 5,000 unbound volumes. These separate libraries are found in the College of Agriculture, the School of Education, the departments of Mathematics, Biology, Chemistry, Geology and Mining, Physics, Civil, Mechanical and Electrical Engineering.

The Women's Gymnasium occupies the south wing of the basement floor of University Hall. It has been equipped as far as means were available with modern apparatus, and is provided with lockers, dressing rooms and shower baths.

The Athletic Field. For the accommodation of the University football and baseball teams and spectators there is an excellent athletic field with a covered grandstand and bleachers. The baseball diamond has recently been rebuilt and greatly improved, the size of the athletic field has been almost doubled, and a first-class quarter-mile running track and football field are under construction. When the improvements now under way are completed the facilities afforded for outdoor exercises will be sufficient for the accommodation of a large number of students.

ADMINISTRATION AND ORGANIZATION

GOVERNMENT

The government of the University is vested primarily in a Board of Trustees, consisting of nine members. The Governor of the State and the Superintendent of Public Instruction are ex-officio members of the Board of Trustees; the other members are appointed by the Governor.

The administration of the University is vested in the President of the University, the University Council, the University Senate, the faculties of the several colleges, and the Deans of the colleges and of the School of Education.

The President is the administrative head of the University. The University Council is composed of the President, the Deans of the colleges, and four other members, appointed by the President. The Council is the central executive body of the University and is advisory to the President.

The University Senate is composed of the President of the University, the Deans of the college faculties, the Dean of Women, and all heads of departments and professors in the colleges. The Senate is the general legislative body of the University.

The faculties of the colleges of the University are composed of the members of the corps of instruction of these colleges. They have jurisdiction, subject to higher University authority, over all matters that concern exclusively their colleges.

The Deans of the colleges are responsible for the carrying out of all University regulations within their respective colleges. The Dean of Women acts as an adviser to women undergraduate students and is charged with the general care and conduct of these students.

DIVISIONS OF THE UNIVERSITY

For the purposes of administration the University is divided into three separate but interdependent colleges.

These are:

I. The College of Arts and Sciences, including the School of Education.

II. The College of Engineering.

III. The College of Agriculture.

The College of Arts and Sciences offers courses in—

- (1) The ancient classical languages
- (2) The Romance languages
- (3) The Germanic languages
- (4) The English language and literature
- (5) Mathematics and Astronomy
- (6) Physics
- (7) Chemistry
- (8) Biology
- (9) Geology
- (10) History and Political Science
- (11) Economics and Sociology
- (12) Philosophy
- (13) Education
- (14) Fine Arts (music, art, expression)

The College of Engineering offers courses in—

- (1) Civil engineering
- (2) Chemical engineering
- (3) Electrical engineering
- (4) Mechanical engineering
- (5) Mining engineering

The College of Agriculture offers courses in—

- (1) Agricultural chemistry
- (2) Agronomy
- (3) Animal husbandry
- (4) Bacteriology
- (5) Entomology
- (6) Horticulture
- (7) Plant pathology
- (8) Veterinary science
- (9) Extension and agricultural education

Military Science is offered in all of the colleges

Physical Education is provided for women.

ADMISSION TO THE UNIVERSITY

ADMISSION WITHOUT CONDITIONS

For unconditional admission to the University, a student will be required to present 14 units of high school or other secondary school work. In the 14 units, there must be included 3 units of English and 2 minors of not less than 2 units each. The remaining 7 units may include any work accepted for graduation by an accredited high school. (A unit is the equivalent of a preparatory subject of 5 periods of 45 minutes each week throughout an academic year of 9 months. In laboratory courses, two laboratory periods are counted equal to one recitation period.)

As a condition of entrance to certain courses of study leading to degrees, requirements are made in particular subjects or groups of subjects. For more specific information, see the announcements of the separate colleges and the School of Education.

Entrance credits may be secured by—

- (a) Certification from an accredited school (see page 32).
- (b) Examination (see page 32).
- (c) Transfer of credits from another university or college (see page 37).

ADMISSION WITH CONDITIONS

Students who desire to enter the regular courses of the colleges may enter and be classified as conditioned students, provided their deficiencies do not exceed three units. Conditions may be removed by private study, either with or without a tutor, and examination; or by taking work in the Training High School of Education; or by taking certain of the collegiate courses and offering them in satisfaction of the deficiencies. A freshman course of three hours a week for a year is equivalent to one unit.

Students are classed Freshmen until all entrance conditions are removed.

A student who enters with less than 14 units will not be allowed to take, during his first year, more than the normal number of hours required in his course for that year; and in computing the number of hours a student is carrying, there shall be reckoned all the work he is doing to make up entrance conditions. It should be understood that a student who is admitted to the University with an entrance condition of more than one unit will, as a rule, find it necessary to reside at the University for a somewhat longer period than the usual four years in order to receive the Bachelor's degree. This may be accomplished either by attending the University an additional semester or a year, or by taking work during the summer session. A credit of $3\frac{1}{2}$ college hours or one entrance unit may be obtained in each summer session.

ENTRANCE REQUIREMENTS

Of the 14 units required, the following units are prescribed for admission to the freshman class in all of the colleges of the University.

UNITS PRESCRIBED BY ALL THE COLLEGES

English	-----3 units
Algebra	-----1 unit
Geometry	-----1 unit
History	-----1 unit

Of the remaining 8 units the individual colleges prescribe:

College of Arts and Sciences:

For candidates for the B. A. degree:

Foreign language -----3 units

(At least 2 of these units must be in the same language.)

For candidates for the B. S. C. degree:

Physics -----1 unit

(For admission to the special course in Music, Algebra and Geometry, 2 units, are not required.)

School of Education:

English -----3 units

History -----1 unit

Science -----1 unit

College of Engineering:

Algebra ----- $\frac{1}{2}$ unit

College of Agriculture:

Science (elective) -----1 unit

Algebra ----- $\frac{1}{2}$ unit

Every student is required to present the number of entrance units required of the class in which he graduates.

SUBJECTS ACCEPTED FOR ADMISSION

The following table shows the subjects accepted for admission, the maximum and minimum number of units which may be offered in any particular subject, and the units required in the various colleges.

Subjects	Max.	Min.	Arts and			
			Sciences	Agri.	Eng.	Ed.
English -----	4	3	3	3	3	3
Algebra -----	2	1	1	1	1½	--
Geometry -----	1½	1	1	1	1	--
Trigonometry -----	½	½	---	---	---	--
History -----	4	1	1½	1	1	1
Civil Government -----	½	½	---	---	---	--
Economics -----	½	½	---	---	---	--
Latin -----	4	1	} 3; at least 2 in one language	At least one unit in science		At least one unit in science
Greek -----	3	1				
French -----	4	1				
German -----	4	1				
Spanish -----	4	1				
General Science -----	1	½				
Biology -----	1	½				
Botany -----	1	½				
Zoölogy -----	1	½				
Physiology -----	1	½				
Physics -----	1	½				
Chemistry -----	1	½				
Physical Geography -----	1	½				
Agriculture -----	4	½				
Pedagogy -----	½	½				
Psychology -----	½	½				
Music ¹ -----	3	1				
Drawing and Art -----	2	½				
Man. Tr. and Draw. ² -----	4	1				
Dom. Sci. and Art ² -----	4	½				
Commercial Geog. ² -----	½	½				
Commerce ² -----	4	½				

¹ Only for students entering the special course in Music.

² The maximum number of units allowed in commercial and vocational subjects is four.

DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

The following descriptions will indicate the amount of work that should enable a student to pass entrance examinations in the subjects which may be offered in making up entrance credits.

ENGLISH.—*Composition and Rhetoric*.—Correct spelling, capitalization, punctuation, paragraphing, idiom and definition will be required, together with a knowledge of the elements of rhetoric.

ENGLISH.—*Literature*.—It is expected that each candidate will have read certain assigned literary masterpieces and will have given careful study to certain other works. The requirements in detail are:

1. *For Careful Study*. Certain books are prescribed for careful study. Candidates will be examined upon the subject matter, literary form, and logical structure of these books, and, in addition may be required to answer questions involving the leading facts in those periods of English literary history to which the prescribed works belong. One is to be selected from each of the four groups.

I. *Drama*—Shakespeare: *Julius Caesar*, *Macbeth*, *Hamlet*.

II. *Poetry*—Milton: *L'Allegro*, *Il Penseroso* and either *Comus*, or *Lycidas*. Tennyson: *The Coming of Arthur*, *the Passing of Arthur*, and *The Holy Grail*. Selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's *Golden Treasury* (First Series).

III. *Oratory*—Burke: *Speech on Conciliation with the Colonies*. Macaulay: *Speech on Copyright*; and Lincoln: *Cooper Union Address*. Washington: *Farewell Address*; and Webster: *Bunker Hill Oration*.

IV. *Essays*—Carlyle: *Essay on Burns*; and *Selections from Burns's Poems*. Macaulay: *Life of Johnson*. Emerson: *Essay on Manners*.

2. *For General Reading*.—The candidate will not be expected to know these books minutely, but to have their important parts fresh in mind. On examination he will be required to write a paragraph or two on each of several topics drawn from them. Ten units are to be selected, two from each group.

I. *Classics in Translation*—The Old Testament (comprising

at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther). *The Odyssey* (with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII). *The Iliad* (with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI). *The Æneid*.

For any selection from Group I a selection from any other group may be substituted. *The Odyssey*, *Iliad* and *Æneid* should be read in English translations of recognized literary merit.

II. Shakespeare: *A Midsummer Night's Dream*, *The Merchant of Venice*, *As You Like It*, *Twelfth Night*, *The Tempest*, *Romeo and Juliet*, *King John*, *Richard the Second*, *Richard the Third*, *Henry the Fifth*, *Coriolanus*, **Julius Caesar*, **Macbeth*, **Hamlet*.

III. *Prose Fiction*—Malory: *Morte d'Arthur*. About 100 pages. Bunyan: *Pilgrim's Progress*, Part I. Swift: *Gulliver's* voyages to Lilliput and to Brobdingnag. Defoe: *Robinson Crusoe*, Part I. Goldsmith: *Vicar of Wakefield*. Scott: any one novel. Jane Austen: any one novel. Maria Edgeworth: *Castle Rackrent*, or *The Absentee*. Frances Burney: *Evelina*. Dickens: any one novel. Thackeray: any one novel. George Eliot: any one novel. Mrs. Gaskell: *Cranford*. Kingsley: *Westward Ho!* or *Hereward the Wake*. Reade: *The Cloister and the Hearth*. Blackmore: *Lorna Doone*. Hughes: *Tom Brown's School Days*. Stevenson: any of the novels which are out of copyright. Cooper: any one novel. Poe's *Selected Tales*. Hawthorne: any one of the novels which are out of copyright. A collection of short stories by various standard writers.

IV. *Essays, Biography, Etc.*—Addison and Steele: *The Sir Roger de Coverley Papers*, or Selections from *The Tatler* and *The Spectator*. Boswell: Selections from the *Life of Johnson* (about 200 pages). Franklin: *Autobiography*. Irving: Selections from the *Sketch Book* (about 200 pages), or the *Life of Goldsmith*. Southey: *Life of Nelson*. Lamb: Selections from the *Essays of Elia* (about 100 pages). Lockhart: Selections from the *Life of Scott* (about 200 pages). Thackeray: *Lectures on Swift*, Addison and Steele in *The English Humorists*. Macaulay: one

*If not chosen for study.

of the following essays: *Lord Clive*, *Warren Hastings*, *Milton*, *Addison*, *Goldsmith*, *Frederick the Great*, *Madam d'Arblay*. Trevelyan: *Selections from Life of Macaulay* (about 200 pages). Ruskin: *Sesame and Lilies*, or *Selections* (about 150 pages). Dana: *Two Years Before the Mast*. Lincoln: *Selections* (together with a brief memoir or estimate of Lincoln). Parkman: *The Oregon Trail*. Thoreau: *Walden*. Lowell: *Selected Essays* (about 150 pages). Holmes: *The Autocrat of the Breakfast-Table*. Stevenson: *Inland Voyage*, and *Travels with a Donkey*. Huxley: *Autobiography*, and *Selections from Lay Sermons* (including the address on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk). A collection of *Essays* by Bacon, Lamb, De Quincey, Emerson, Hazlitt and later writers. A collection of letters by various standard writers.

V. *Poetry*—Palgrave's *Golden Treasury* (First Series), Books II and III, with special attention to Dryden, Gray, Cowper, Burns, and Collins. Palgrave's *Golden Treasury* (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study). Goldsmith: *The Traveller*, and *The Deserted Village*. Pope: *The Rape of the Lock*. A Collection of English and Scottish Ballads (as, for example, Robin Hood Ballads, The Battle of Otterburne, King Estmere, Young Beichan, Bewick, and Grahame, Sir Patrick Spens, and a selection from later ballads). Coleridge: *The Ancient Mariner*, *Christabel*, and *Kubla Khan*. Byron: *Childe Harold*, Canto III; or *Childe Harold*, Canto IV, and *The Prisoner of Chillon*. Scott: *The Lady of the Lake*, or *Marmion*. Macaulay: *The Lays of Ancient Rome*, *The Battle of Naseby*, *The Armada*, *Ivry*. Tennyson: *The Princess*, or *Gareth and Lynette*, *Lancelot and Elaine*, *The Passing of Arthur*. Browning: *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*, *The Italian in England*, *The Patriot*, "De Gustibus," *The Pied Piper*, *Instans Tyrannus*. Arnold: *Sohrab and Rustum*, and *The Forsaken Merchant*. *Selections from American Poetry*, with special attention to Poe, Lowell, Longfellow, and Whittier.

In connection with the reading and study of the prescribed books, parallel or subsidiary reading should be encouraged, and

a considerable amount of English poetry should be committed to memory.

Though there is no formal examination in grammar or rhetoric, the ability to write good English will be considered of the utmost importance. Serious defectiveness in point of spelling, grammar, idiom, punctuation, clear and accurate expression, or division into paragraphs, will be taken as primary evidence of the candidate's unfitness. The candidate may present, as an additional evidence of preparation, an exercise book properly certified by his instructor, containing compositions or other written work.

ALGEBRA. One Unit.—A course based on Hawkes-Luby-Touton's *First Course in Algebra* to page 288, or its equivalent, will be considered as one unit. This admits the student to Math. 0, or Math. 3.

One and one-half units.—The student who has completed, in addition to the first unit, a course based on Hawkes-Luby-Touton's *Second Course in Algebra*, or the equivalent, will be allowed one and one-half units. This course must include theory of quadratics, simultaneous quadratics, inequalities, ratio and proportion, variation, progressions (arithmetical, geometrical, and harmonical), binomial theorem, and logarithms. This admits the student to Math. 1a.

Two units.—The student who has completed Wells' *Advanced Course in Algebra* to page 428, or the equivalent, will be allowed two units. This additional half unit will not be given unless the course is equivalent to Math. 1a.

GEOMETRY. Plane Geometry.—All of plane geometry is required for admission to the freshman class. A note book containing the solution of at least one hundred and fifty original exercises should be submitted for inspection. One unit.

Solid and Spherical Geometry.—Applications to the solutions of original exercises are emphasized. One-half unit.

TRIGONOMETRY. One-half unit.—The student who has completed Harding and Turner's *Plane Trigonometry*, or its equivalent, will be allowed one-half unit.

HISTORY. Ancient History.—The completion of a standard text-book, with emphasis on the history of Greece and Rome and

some attention to geography, will meet the requirements for one unit.

Mediaeval and Modern History.—A standard text covering the history of Europe in mediæval and modern times, some parallel reading, and a knowledge of the geography involved.

English and American History.—An advanced high school text should be used for a unit on either subject, together with outside readings and a study of the geography involved. The use of current newspapers and magazines is advised. The presentation of a note-book will help in case of examinations.

CIVIL GOVERNMENT.—One-half unit will be allowed in this subject for the completion of some standard text, such as those of Garner, or James and Sanford.

GENERAL SCIENCE.—A unit of credit is given for a year's work spent in the study of the earth and the sun in their relations to man, based on some such book as Snyder's *First Year Science*. All the subjects of elementary science should be included.

ECONOMICS.—One-half unit in economics will be granted for completion of any standard elementary text, such as those of Bulloch, Seligman, or Ely.

LATIN.—The completion of a standard first year Latin book will meet the requirements for one unit. An additional unit will be given for the reading of four books of Cæsar, accompanied by a thorough study of forms and the practice of translating English into idiomatic Latin. Four orations of Cicero, or the equivalent in other prose, with a like study of grammar and prose composition will secure a third unit. Students offering Vergil should have had four years of instruction in Latin and should have read not less than six books of the *Æneid*. For this a fourth unit will be allowed.

GREEK.—White's *First Greek Book* and a part of Xenophon's *Anabasis*, Book I, will meet the requirements for one unit. The completion of Xenophon, accompanied by a regular study of grammar and prose composition, will secure a second unit.

FRENCH.—*First Year's Work.*—The candidate should have a knowledge of elementary grammar and irregular verbs, must be able to read easy French prose at sight, and must have read at least 200 pages of simple prose.

Second and Third Year's Work.—The candidate will be ex-

pected to be able to translate standard French prose and poetry at sight and turn easy English prose into French. The candidate should have read 700 pages of such authors as Daudet, Loti, Sandeau, Dumas, Augier, Labiche and Martin, and Hugo.

GERMAN.—*First Year's Work*.—The student should know the rudiments of grammar and possess an ability to read easy prose at sight and to translate simple English sentences into German. He should have read 200 pages of easy prose.

Second and Third Year's Work.—The student should be able to read modern German prose and poetry at sight and to translate easy English narrative into German. He should have read 450 pages of the works of Riehl, Heyse, Freytag, Baumbach, Heine, Goethe and Schiller, and 30 pages of lyrics and ballads.

SPANISH.—For one and two units respectively the time and amount of work should be the equivalent of that required in French.

GENERAL BIOLOGY.—For one unit the student should spend a year on the subject, two double periods being given to laboratory work. Students taking the examination must present note-books and drawings showing the work done.

BOTANY.—An acquaintance with the general structure of plants and of their principal organs and their functions is required, together with an ability to classify the more common species. A laboratory note-book covering two hours of laboratory work a week for one year must be presented.

ZOOLOGY.—The completion of any one of the standard high school text-books on the subject, together with at least two hours of laboratory work for one year, will meet the requirement for one unit. A certified laboratory note-book must be presented for examination.

PHYSICS.—The requirements are equivalent to those for Zoology. A certified laboratory note-book, covering two hours of preparatory work a week for one year, must be presented for examination.

CHEMISTRY.—The instruction must have included both recitations and laboratory work. Such courses as are given in the best high schools in one year will be equivalent to the one unit required. Laboratory notes bearing the teacher's endorsement must be presented for examination.

PHYSIOLOGY.—For a unit in this subject the student must spend a year on a standard high school text, such as those of Hough and Lee or Martin, together with individual laboratory instruction and demonstration work. Note-books and drawings are required.

PHYSICAL GEOGRAPHY.—One unit will be allowed for a year's work based on text-book and laboratory.

AGRICULTURE.—For one unit, a year of recitation work based on a standard text, such as Warren's or its equivalent, supplemented by at least one laboratory or practicum period a week for a half year.

PSYCHOLOGY.—For a half year's work based on Colvin and Bagley or Titchener or the equivalent one-half unit will be allowed.

PEDAGOGY.—A course based on Seeley's *School Management* or Strayer's *Brief Course in the Teaching Process* will be the equivalent of half a unit.

ART.—One unit in drawing will be allowed for one year's work of five hours a week.

MUSIC.—A unit in music is equivalent to two lessons a week, of at least thirty minutes each, together with two hours of practice, five days a week, throughout a year.

MANUAL TRAINING AND MECHANICAL DRAWING.—The time required in each of these subjects for one unit is equivalent of five double periods each week for one year, or five single periods for two years. The two subjects should be pursued in parallel courses.

DOMESTIC SCIENCE AND ART.—One unit may be presented for a year's work in either cooking or sewing, or for a combination of the two. The time must be the equivalent of that given to Physics.

COMMERCIAL GEOGRAPHY.—One-half unit will be allowed for a half year's work in this subject. The course should deal with physical conditions, race and religion, economic forces, and transportation as affecting commerce, all with particular reference to the United States. Physical Geography should precede.

COMMERCE.—One unit will be allowed for a year's work on bookkeeping, invoices, accounts, sales, notes, etc. The time must be equivalent to that spent on other subjects. The character of

the work presented by the student as the result of his study will be the best evidence that he deserves the credit.

ENTRANCE EXAMINATIONS.

Entrance examinations may be taken at the University, or by special arrangement, at other places.

For 1915 the order of examinations at the University is as follows:

Geometry -----Wednesday, Sept. 15, 1 p. m. to 3 p. m.
Algebra -----Thursday, Sept. 16, 1 p. m. to 4 p. m.
Latin -----Friday, Sept. 17, 1 p. m. to 4 p. m.

English Composition and

Literature-----Saturday, Sept. 18, 9 a. m to 12 m.
United States History--Saturday, Sept. 18, 2:30 p. m. to 4 p. m.
European History-----Saturday, Sept. 18, 2:30 p. m. to 4 p. m.

The time of examination in other subjects will be announced at the opening of the University.

Students living at a distance from the University may obtain special entrance examinations, if application is made in due time before the beginning of the session. These examinations will be conducted by a principal of any school, or by a county examiner, under conditions that will be indicated when the application is made.

ADMISSION BY CERTIFICATE.

Graduates from accredited schools of Class A may be admitted without conditions to the freshman class in the colleges of the University without examination, provided, in every case, certificates from the principal of the school attended have been presented. Such certificates must contain specific statements of the kind and extent of work done. *Diplomas of graduation will not be accepted in lieu of certificates.* All certificates are passed upon by the Committee on Accredited Schools of the University Senate.

Blank forms for certificates will be sent to the principals of the various accredited schools shortly before the close of the

school year. Principals are requested to fill out certificates for each graduate of the year and forward them to the University as soon as may be convenient.

Graduates of schools in Class A having 16 units may receive conditional college credit on 2 units, the equivalent of 6 hours. In order to have this credit entered on his record the student must, the first year of residence, pass off more advanced courses in the subjects offered for college credit.

Graduates from accredited schools of Class B may enter the University by certificate, as in the case of graduates from schools of Class A. Such graduates, however, will enter with conditions, that is, will lack two or three of the fourteen units required. They will be admitted to the freshman class of the college and permitted to make good their deficiencies while in attendance at the University (see page 22)

Graduates from schools of Class C cannot enter the University by certificate. They must do a third year of high school work, or if they lack no more than two units, may by private study prepare to stand the entrance examinations.

Prospective University students in high schools should take notice that the policy of the University is to discourage them from coming to the University before graduation from the high school.

LIST OF ACCREDITED SCHOOLS

CLASS A

Schools accredited in work amounting to 14 units or more

Argenta High School	Huntington High School
Arkansas Cumberland College	Jonesboro High School
Arkansas State Normal	Junction City High School
Arkadelphia High School	Lake Village High School
Ashdown High School	Little Rock College
Atkins High School	Little Rock High School
Augusta High School	Lonoke High School
Bentonville High School	Magnolia High School
Berryville High School	Malvern High School
Blytheville High School	Mena High School
Booneville High School	Monticello High School
Cabot High School	Moro High School
Camden High School	Morrilton High School
Carlisle High School	Mountain Home Academy
Clarendon High School	Newport High School
Corning High School	Paragould High School
Crescent College Academy	Pea Ridge High School
Crossett High School	Piggott High School
Dardanelle High School	Pine Bluff High School
DeQueen High School	Pocahontas High School
Dumas High School	Prescott High School
El Dorado High School	Rector High School
El Paso High School	Rogers High School
England High School	Russellville High School
Eureka Springs High School	Searcy High School
Fayetteville High School	Siloam Springs High School
Fordyce High School	Springdale High School
Foreman High School	Stamps High School
Fort Smith High School	Stuttgart High School
Gravette High School	Stuttgart Training School
Green Forest High School	Texarkana High School
Greenwood High School	University Training High School
Hamburg High School	Van Buren High School
Harrison High School	Waldron High School
Hazen High School	Warren High School
Heber Springs High School	Warren Training School
Helena High School	Wynne High School
Hope High School	
Hot Springs High School	

CLASS B

Schools accredited in work amounting to 11-13 units

Arkansas City High School	Leslie High School
Batesville High School	Lockesburg High School
Bellefonte High School	McCrory High School
Benton High School	Mansfield High School
Bigelow High School	Marianna High School
Brinkley High School	Marshall High School
Cane Hill High School	Marvell High School
Charleston High School	Mulberry High School
Choctaw High School	Murfreesboro High School
Clarksville High School	Nashville High School
Clinton High School	Newark High School
Columbus High School	Okolona High School
Cotter High School	Osceola High School
Damascus High School	Ozark High School
Dermott High School	Paris High School
DeVall's Bluff High School	Parkdale High School
Forrest City High School	Prairie Grove High School
Gentry High School	Rison High School
Gillette High School	Roe High School
Gurdon High School	Sloan Hendrix Academy
Hardy High School	Stephens High School
Harrisburg High School	Strong High School
Hartford High School	Sutton High School
Havanna High School	Tillar High School
Hesperian High School,	Trenton High School
Lockesburg	Waldo High School
Holly Grove High School	Wilton High School
Jacksonville High School	

CLASS C

Schools accredited in fewer than 11 units

Alix High School	Belton High School
Alma High School	Black Rock High School
Altus High School	Bluffton High School
Amity High School	Bradford High School
Antoine High School	Branch High School
Ash Flat High School	Cave Springs High School
Aubrey High School	Cato High School,
Bald Knob High School	Center Ridge
Bauxite High School	Center Ridge High School
Bearden High School	Cherry Valley High School
Beebe High School	Cleveland High School
Belleville High School	Cole High School

Cove High School	Montrose High School
Conway High School	Mount Ida High School
Daisy High School	Mountainburg High School
Danville High School	Mountain View High School
Delight High School	Mount Judea High School
Des Arc High School	Naylor High School
DeWitt High School	Ola High School
Dover High School	Palestine High School
Earle High School	Parkin High School
Eudora High School	Perryville High School
Evening Shade High School	Pleasant Plains High School
Formosa High School	Plummerville High School
Friedship High School	Portland High School
Fulton High School	Poe High School
Gillham High School	Pea Ridge Masonic College
Glenwood High School	Prairie View High School
Grannis High School	Quitman High School
Gravelly High School	Rando High School
Grayson High School	Ratcliff High School
Guy High School	Sardis High School
Hampton High School	Saratoga High School
Hatfield High School	Scotts High School
Hermitage High School	St. Paul High School
Hermon High School	Sheridan High School
Horatio High School	Star City High School
Houston High School	Sulphur Rock High School
Jasper High School	Swifton High School
Judsonia High School	Thornton High School
Kingsland High School	Tuckerman High School
Lewisville High School	Uniontown High School
London High School	Vaughn High School
Luxora High School	Vick High School
McGehee High School	Vilonia High School
McNeil High School	Walnut Ridge High School
Magazine High School	Washington High School
Mammoth Springs High School	Watson Chapel High School
Manilla High School	West Fork High School
Marion High School	Wilmar High School
Melbourne High School	Yellville High School
Mineral Springs High School	

SCHOOLS ACCREDITED FOR ENTRANCE INTO THE COLLEGE OF
AGRICULTURE

First District Agricultural High School.....	Jonesboro
Second District Agricultural High School.....	Russellville
Third District Agricultural High School.....	Magnolia
Fourth District Agricultural High School.....	Monticello

ADMISSION BY TRANSFER OF ENTRANCE CREDITS FROM OTHER
COLLEGES OR UNIVERSITIES

A person who has been admitted to another college or university of good standing will be admitted to this University upon presenting a certificate of honorable dismissal from the institution from which he comes and an official statement of the subjects upon which he was admitted to such institution, provided it appears that the subjects are those required for admission to this University, or are substantially equivalent to the requirements of this University.

ADMISSION TO ADVANCED STANDING

After registration, an applicant may secure advanced standing either by examination or by transfer of credits from another college or university.

1. *By Examination.* Advanced standing may be secured only by examination, unless the applicant is from another university or college. This examination must be taken within six weeks after the student first matriculates.

2. *By Transfer of Credits.* Credits of another college or university may be accepted for advanced standing. Applicants for such credits must present an official statement of the work done in the institutions from which they come, and must present certificates of honorable dismissal.

ADMISSION AS SPECIAL STUDENTS

Persons over 18 years of age, not candidates for a degree, may be admitted as special students on terms prescribed by the individual colleges. In every case they must secure the recommendation of the professor whose work they wish to take and the approval of the dean of the college concerned. The requirements of the different colleges are:

College of Arts and Sciences. Special students must be at least 20 years of age, except that persons at least 18 years of age will be permitted to enroll in the Department of Fine Arts.

College of Engineering. Special students must be at least 18 years of age, except that those taking special short courses or trades courses may be admitted at the age of 16.

College of Agriculture. Special students must be at least 18 years of age, except that those taking the short winter course may be admitted at the age of 16.

Special students are subject to the same regulations as regular undergraduate students. They may become candidates for graduation upon complying with all the necessary University regulations.

No person will be permitted to abuse the privilege of registering as a special student to secure merely nominal membership in the University, whether for social purposes or to engage in athletics, or for any other reason.

No person will be allowed to register as a special student for more than one collegiate year, without the permission of the college faculty or faculties concerned.

SUNDRY REGULATIONS

A student in his first semester at the University, unless he is classified as a member of a class higher than the freshman, shall not be permitted to carry a greater number of hours than the normal number of hours required of the freshman class in his college; provided that the deans may make exceptions to this rule in favor of those students who have done work of an exceptionally high grade in the high school, and have entered the University without conditions.

No student who has failed in any subject in any semester shall be allowed, the next following semester, to carry more than the normal number of hours required in his class and course. Exceptions to this rule may be made only by the University Senate.

The Dean of any college may, in his discretion, limit the number of hours any student is allowed to carry.

In no case shall a conflict between classes be permitted to cause a student to lose more than one-third of the time devoted to recitation in either class. In order to enroll in classes where any conflict occurs, a student must get permission from his dean and from the heads of both departments concerned.

FEES AND EXPENSES

FEES

The University year is divided into two semesters, and all fees must be paid in advance at the beginning of each semester. No student is allowed to enter any classes until his fees for the semester are paid.

Fees are paid to the Secretary of the University.

Matriculation (paid by all students, \$7 at the beginning of each semester) -----	\$14.00
Student Activities fee (paid by all students, \$3 at the beginning of each semester) -----	6.00
Tuition (paid by all non-residents of Arkansas and by all others who do not hold beneficiary appointments, \$5 at the beginning of each semester) -----	10.00
Dormitory fee (paid yearly by all students living in the dormitories) -----	5.00
Diploma fee (payable at graduation) -----	5.00

Thus a student entering at any time during the first semester must pay the matriculation fee of \$7 and the student activities fee of \$3, a total of \$10.00. If he is a non-resident of Arkansas or does not hold a beneficiary appointment he must, in addition, pay a tuition fee of \$5. The fees for the year are double those for the semester. The second payment must be made at the beginning of the second semester.

BENEFICIARY APPOINTMENTS

The state law provides that one thousand students residing in the state may receive beneficiary appointments entitling them to free tuition. These appointments are apportioned to the various counties according to the population, and are obtained from the County Judge. Those who are unable to obtain beneficiary appointments from the County Judge may receive them from the President of the University, until the number of one thousand is reached.

Breakage Fee. Students, working in the laboratories are re-

quired to make a deposit to pay for materials and apparatus used and for any breakage or damage. In no course does the deposit exceed \$10. The balance of the deposit is refunded, after making the necessary deductions.

Fees in the Department of Fine Arts

Piano with Mr. Tovey, a semester -----	\$27.50
Piano with Mr. Tovey, a month -----	7.50
Piano with Assistant, a semester -----	22.50
Piano with Assistant, a month -----	6.00
Voice, Violin, a semester -----	22.50
Voice, Violin, a month -----	6.00
Organ, a semester -----	27.50
Study of Opera Libretto, a semester -----	3.00
Harmony, in class, a semester -----	5.00
History of Music, in class, a semester -----	5.00
Counterpoint, a semester -----	5.00
Organ practice, an hour -----	.20
Piano practice, one hour daily, a semester -----	2.50
Each additional hour daily, a semester -----	1.25
Recital fee, admitting to at least four artists' recitals (attendance on recitals is required of all students in the department of Fine Arts) -----	3.00
Diploma fee, for completion of the special course in music -----	5.00
A studio fee of \$2 will be charged in all courses in Art except Public School Drawing.	

EXPENSES

The following estimates, based upon data secured from students recently in attendance, will give some idea of the cost of attending the University for a year:

Clothes, including uniform -----	\$ 20.00	\$ 40.00	\$ 65.00
Board, laundry, etc. -----	135.00	180.00	225.00
Books, instruments, etc. -----	10.00	15.00	20.00
Other expenses -----	25.00	30.00	35.00
Matriculation and student activities fee --	20.00	20.00	20.00
	<hr/>	<hr/>	<hr/>
	\$210.00	\$285.00	\$365.00

BOARD AND ROOMS

Dormitories

The three men's dormitories provide accommodations for about 250 students.

For rooms in the dormitories, unfurnished, a charge of \$5 a year for each occupant is made. Board, light, heat and laundry work are provided at cost, usually about \$15 a month.

The women's dormitory, Carnall Hall, provides accommodations for about 100 students. The rooms in Carnall Hall are furnished, except with linen, towels, etc.

In order to secure a reservation in any of the dormitories, the fee of \$5 must be sent to the Secretary of the University on or before September first.

Boarding and Lodging in Private Houses.

Boarding places must be selected from a list of such places as have been approved by the University authorities. Once chosen, boarding places cannot be changed except by consent of the President, in the case of men, or of the Dean of Women, in the case of women.

DISCIPLINE

The enforcement of discipline is in the hands of the Senate Committee on Discipline and Attendance, the University Council and the deans of the colleges.

Students are required to be diligent in the pursual of their studies and regular in attendance upon classes. The University will not permit students to remain at the University who fail to meet its requirements.

At the beginning of the year a handbook containing the rules and regulations of the University is placed in the hands of each student. Students will be held responsible for the observance of the regulations therein contained.

Students must matriculate and classify if possible during the first three days of the session. Failure to do so may be cause for discipline.

UNIVERSITY ORGANIZATIONS AND EXERCISES

CONVOCATION

At 10 o'clock on Thursday of each week of the session the faculty and students assemble in the University auditorium to engage in Convocation exercises. At these meetings helpful addresses are delivered and general University affairs are discussed. Occasional musical and other numbers add variety to the program. Attendance on convocation is required of all freshmen and sophomores.

THE CHRISTIAN ASSOCIATIONS

During the year 1914-15, 125 men and 100 women were enrolled in the Young Men's and Young Women's Christian Associations. Each association employs a general secretary who gives full time to the work.

Religious meetings for men are held on Sunday afternoons in the Association Hall, and on Wednesday evenings. Religious services for women are held on Sundays, and on Wednesdays and Fridays; a series of special evangelistic meetings is held once each year. Courses in systematic Bible study and in modern missions are offered.

A most helpful feature of the work of the associations is in their interest in new students at the opening of the college year. Students are assisted in securing desirable rooms and boarding places. A bureau of information is conducted for the benefit of all students who need assistance.

Each year the associations issue a Student's Handbook, which gives information about Fayetteville, the University, and the various college organizations and activities.

The Christian Associations stand for spiritual, mental, and physical development. Their mission is to befriend and help those who need friends and help, to apply Christian principles to college life, to train for aggressive religious work—in short, to prepare men and women to go out from the University to become religious leaders, as well as business, social and intellectual leaders.

The University authorities are in hearty sympathy with the

organizations and do everything in their power to aid in their work.

Two elective courses in the English Bible are offered for which collegiate credit is given (see page 84)

ORGANIZATIONS AUXILIARY TO COURSES OF STUDY

The Chemistry Journal Club is composed of students taking the courses in chemistry. At its weekly meetings instructors and advanced students take part in the discussion of articles in the current chemical journals.

The American Institute of Electrical Engineers, University of Arkansas Branch, meets regularly on the alternate Tuesdays throughout the school year, for the presentation of original papers and for discussion of the regular Institute transactions of which advance copies are received. All students interested in electrical engineering are eligible to membership.

The American Society of Mechanical Engineers, University of Arkansas Student Section, meets regularly on the second and fourth Mondays of the month, during the school year. The meetings are devoted to the presentation of original papers and discussion of papers selected from those regularly presented before the American Society of Mechanical Engineers, of which advance copies are received. Occasionally a lecture by some prominent engineer takes the place of the regular program.

The Agricultural Society meets weekly to discuss topics of practical and theoretical interest to students of agriculture and current topics of general interest. Occasional lectures by experts in agriculture take the place of the regular programs.

The John C. Branner Geological Club meets on the second Monday of each month. Its programs consist of papers and occasional lectures on geological topics. Membership in the club is open to students in the courses in geology.

The Blackfriars is a dramatic club limited to twenty-five members. It meets on alternate Tuesdays throughout the year in the club room, 18 Peabody Hall, for the study of plays, classic and current, and for general information in matters pertaining to the drama and to the theater. Two plays are produced each year.

Der Deutsche Verein meets on alternate Wednesday evenings throughout the school year for the purpose of conversing in Ger-

man, learning German customs, and singing German folk songs, etc. All students who have studied German are eligible to membership.

LITERARY SOCIETIES

The *Garland*, *Periclean* and *Lee* societies for men meet weekly on Saturday evenings during the school year. The *Sapphic* Society for women meets on Thursday afternoons.

INTERCOLLEGIATE DEBATES

The University is a member of the Pentagonal Debating League, composed of the Universities of Arkansas, Louisiana, Mississippi, Tennessee and Texas. Each institution has two teams which support opposite sides of the question. The affirmative team remains at home and the negative team leaves the state. The contests are held on the first Friday after the first Monday in April of each year. On the Monday night following Easter of each year Arkansas debates with Oklahoma.

The Debaters' "A" and one and one-half hours' college credit are given to each representative of the University on the forum.

The Debating Council, composed of three members from each literary society, has charge of all debates.

NATIONAL DEBATING FRATERNITY

The Tau Kappa Alpha, an honor fraternity, whose membership is restricted to intercollegiate debaters and orators, has its Arkansas Chapter in the University. The aim of the organization is to encourage and reward all meritorious efforts in public speaking.

TAU BETA PI

Tau Beta Pi is an engineering honorary fraternity whose object is to encourage scholarship and to foster liberal culture in the engineering schools of America. The eligibility requirements are as follows: The man ranking first in his class at the end of his sophomore year is eligible at the beginning of his junior year; the first eight of the class are eligible at mid-year of the junior year; the remaining of the first four are eligible at the beginning of the senior year.

THE GLEE CLUB

The University of Arkansas Glee Club is a student musical organization, membership in which is open to men students and is determined by competition.

STUDENT PUBLICATIONS

There are three publications issued by the student body: *The University Weekly*, devoted to current events in all departments of the University; *The Arkansan*, a literary magazine appearing monthly; and the *Cardinal*, which is published annually, and gives a history of the college year. The *Weekly* is edited by a board selected from the entire student body; the *Cardinal* is published by the members of the junior class.

DEGREES—GRADUATION

DEGREES AND CERTIFICATES

The following degrees are conferred by the departments of the University at Fayetteville:

In the *College of Arts and Sciences*, Bachelor of Arts (B. A.), Bachelor of Science in Chemistry (B. S. C.), Master of Arts (M. A.), and Master of Science (M. S.).

In the *School of Education*, Bachelor of Science in Education (B. S. E.) and Bachelor of Arts in Education (B. A. E.).

In the *College of Engineering*, Bachelor of Chemical Engineering (B. Ch. E.), Bachelor of Civil Engineering (B. C. E.), Bachelor of Electrical Engineering (B. E. E.), Bachelor of Mechanical Engineering (B. M. E.), and Bachelor of Mining Engineering (B. Mi. E.), Chemical Engineer (Ch. E.), Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.).

In the *College of Agriculture*, Bachelor of Science in Agriculture (B. S. A.), Bachelor of Science in Home Economics (B. S. H. E.), and Master of Science (M. S.).

A bachelor's degree is conferred on any student who satisfactorily completes the course of study prescribed for the degree by his college, doing at least the last year of his work in residence at the University.

If the student is in residence at the University for one year only, that year's work must be taken in the college from which the degree is expected. The final year of residence work must not be less than the equivalent of sixteen hours for one year.

A candidate for a bachelor's degree must pass in the studies prescribed in his chosen course and must conform to the rules governing the election of studies.

Men excused from the military requirements, and the women excused from the physical training requirements, must offer instead an equivalent number of hours in other subjects. All women must present an additional hour of credit in some elective.

The requirements for the various degrees and the prescribed courses are given in detail in the announcements of the various colleges.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

Before a student is admitted to candidacy for the master's degree he must have received the bachelor's degree from this University or another institution in which the course of study is equivalent.

At least one year must intervene between the conferring of the bachelor's and the master's degree.

Candidates are required to pursue a course of study in one major and not more than two minor subjects, aggregating with a thesis sixteen hours, in residence. Fourteen of the sixteen hours must be taken regularly in the class-room. A graduate of the University of Arkansas may pursue one-half of his study in absence by correspondence, provided that his undergraduate work is satisfactory to the Dean of the College and the Committee on Graduate Work.

The major subject, occupying with the thesis eight hours, must be at least third year work in a subject in which the candidate has at least six credits.

Six hours of additional work must be selected in not more than two closely related subjects, in each of which the candidate must have received at least six credits.

All work credited toward a master's degree must be done after the corresponding bachelor's degree has been received.

REQUIREMENTS FOR THE GRADUATE DEGREES IN ENGINEERING

For candidates doing work in residence at the University the requirements are similar to those for the master's degree, save that the amount of work demanded is not less than fifteen hours a week as counted in undergraduate work.

These degrees will also be given to graduates of this University in civil, mechanical, electrical, and chemical engineering who have been in successful practice of their profession for three years, and who present a statement of their work, together with a satisfactory thesis on an approved subject.

CERTIFICATES

Certificates are conferred on students who complete the following courses:

In the *College of Arts and Sciences*, the Special Course in Music, the Academic Course in Art.

In the *College of Engineering*, short courses in Civil, Electrical, and Mechanical Engineering.

In the *School of Education*, the Normal Course.

In the *College of Agriculture*, the Normal Course in Home Economics.

HONORS, SCHOLARSHIPS, PRIZES

SCHOLARSHIPS

University Scholarships. By authority of the Board of Trustees fifteen Graduate and Undergraduate Scholarships have been established. Graduates of this University or of other universities are eligible for appointment to Graduate Scholarships. Students of this University of senior standing may be appointed to Undergraduate Scholarships. Holders of scholarships are expected to render a certain amount of service in the departments in which they hold scholarships. Graduate Scholars will receive \$150, Undergraduate Scholars, \$125 per year. Appointments to scholarships will be made by the University Council.

Women's Club Scholarships. The Federation of Women's Clubs of Arkansas offers two scholarships, one for men and one

for women. Appointment to these scholarships is determined by a competitive examination conducted by the University.

Daughters of the Confederacy Scholarship. The Daughters of the Confederacy of the state have provided a scholarship.

Elk's Scholarship. The B. P. O. of Elks has also provided a scholarship.

Further details regarding any of the foregoing scholarships may be had by applying to the President of the University.

UNIVERSITY HONORS

By a system of honors the University gives official recognition of attainments in scholarships. The honors are Departmental Honors, General Honors, and Honors at Graduation.

Departmental Honors. To be eligible for departmental honors a student must pass in at least nine credits in the department with a grade of E. From the students who are eligible for honors in a department, the teaching force of the department shall select the first and second honor graduate. As a basis for this selection, all of the work done in the department shall be considered and general class standing if necessary.

Class Honors. Any student who passes in at least fifteen hours of collegiate work and receives a grade of E in not less than twelve hours and ranks not less than F in any course shall receive *class honors*.

Honors at Graduation. Any student who makes class honors in both his junior and senior years shall be termed an *Honor Graduate*.

All honors shall be published at commencement, and in the catalogue for the following year.

All students who are honor graduates shall have the fact noted in their diplomas.

PRIZES

The William Jennings Bryan Prize. Mr. William Jennings Bryan gave to the University \$250, from the interest of which sum a prize is offered annually for the best essay on some topic relating to the problems of government. The contest is open to students who have junior or senior standing, and to special stu-

dents, with certain restrictions. Further details of the conditions for competition may be had from the professor of economics and sociology.

The Johnson Prize. Dr. W. S. Johnson offers a valuable loving cup to be competed for in an oratorical contest open to the members of the literary societies.

The Brough Debating Medal. Dr. Charles Hillman Brough, of the department of economics and sociology, offers a medal of the value of \$20, or \$20 in money, as a prize for excellence in debate, to be contested for by two representatives from each of the literary societies of the University. Two debates are held during the session; one formal, in which the speeches are prepared, and valued at sixty per cent; the other informal, in which the speeches are impromptu, and valued at forty per cent. These debates are designed to train students of the University in the art of forensic speaking, and to promote a friendly rivalry among the literary societies.

Arkansas Engineering Society Prize. A prize not exceeding \$25 in value, is offered by the Arkansas Engineering Society for the best thesis submitted by a member of the senior class in the College of Engineering of the University of Arkansas.

THE COLLEGE OF ARTS AND SCIENCES

DEGREES AND CERTIFICATES

Students who complete the undergraduate courses of the College of Liberal Arts receive the degree of Bachelor of Arts (B. A.) or Bachelor of Science in Chemistry (B. S. C.). The B. A. course is designed to give a liberal education. Much of the course is elective; it will therefore form a proper basis for graduate professional studies in law, in medicine or in preparation for teaching. The B. S. C. course is designed to give training in science, particularly in chemistry.

The degree of Master of Arts (M. A.) is conferred upon post-graduate students who have satisfied the requirements described on page 46.

In addition to the courses that lead to a degree there are certain courses the completion of which is attested by a certificate from the University, e. g., the course in music.

ADMISSION

The admission requirements for the college are given in the general statement of the entrance requirements of the University (pages 22-32).

REQUIREMENTS FOR GRADUATION WITH THE B. A. DEGREE

The following are the requirements for the B. A. degree:

1. *General.* The candidate must meet the University requirements as to residence and registration, and must secure credit in approved courses in the college amounting to 67 hours. (An hour is one class period a week for one year, or two to three hours of laboratory work a week for one year.)

2. *Prescribed subjects.* Specifically prescribed are: English 1 and English 2, 6 hours for all candidates; and military science, 3 hours, for men, or physical education, art, or expression, 3 hours for women.

3. *Group requirements.* The subjects in the college are grouped as follows:

1. Ancient Languages (Greek, Latin), English, German, Romance Languages (French, Spanish, Italian).

2. Mathematics, Astronomy, Biology, Chemistry, Geology, Physics.

3. Economics, Education, History, Political Science, Philosophy, Sociology.

Group 4 includes courses offered in other colleges of the University, a restricted election of which is permitted.

4. Civil, Chemical, Electrical, Mechanical, and Mining Engineering, Agricultural Chemistry, Agronomy, Animal Husbandry, Entomology, Horticulture, Veterinary Science, Domestic Science, Fine Arts.

In the election of studies the following rules must be observed:

1. Not more than 20 hours may be counted in any one subject, and not more than 40 hours in any group.

2. At the close of the candidate's freshman year, he must select a major subject. In general, the candidate will be expected to offer not less than 12 hours in his major subject. The exact major requirements differ with different departments; statements of the requirements are given in connection with the announcements of the various departments or may be had from the heads of departments.

3. Major subjects may be selected only from Groups 1, 2, and 3.

4. All candidates are required to do at least 6 hours of work in one foreign language. Those who continue in the University the language in which they presented only one unit for entrance must offer 9 hours in that language; those who do not continue in the University the language presented for entrance must offer 12 hours in one language. Candidates whose majors are in scientific subjects may distribute their language work between two modern languages.

5. At least 9 hours must be offered from each of Groups 1, 2 and 3.

6. Not more than 9 hours may be offered from Group 4.

7. No course in which fees for tuition are paid by the student to the instructor may be counted towards the degree.

ARRANGEMENT OF COURSES

First Year

Subjects Prescribed for Freshmen.

The following subjects must be taken during the freshman year: English 1, 3 hours; Foreign Language, 3 or 4 hours; Military Science, 1 hour (by men); Physical Education, 1 hour (by women), and Mathematics 3, 3 hours (by men); and electives to total 17 hours.

Subjects Open to Freshmen

The following subjects are unrestrictedly open to freshmen: English 1, French 1, German 1, Greek 1 and 7, Italian 1, Latin A, 1 and 1c, Spanish 1, History 1a, 1b, 11a and 11b, Mathematics 1a, 1b, 2a, 2b, and 3, Biology 1, 2 and 5, Chemistry 1, Geology 1, Economics 1, and Physics 1.

Second Year

The following subjects must be taken during the second year: English 2, 3 hours; Military Science, 1 hour (by men); Physical Education, 1 hour (by women); Foreign Language, 3 hours of the language chosen in the freshman year; from group 2, 3 hours; from Group 3, 3 hours; and electives to bring the total to 17 hours.

Third and Fourth Years

In the third year the only subject required is Military Science, 1 hour (of men). The remaining 16 hours are wholly elective, subject to the approval of the student's major professor and the chairman of the college. In the fourth year, 16 hours of wholly elective work are required, to be chosen with the approval of the major professor and of the chairman of the college.

REQUIREMENTS FOR GRADUATION WITH THE DEGREE OF B. S. C.

First Year

Hours a week

Mathematics 1a, 1b, 2a, 2b-----	6
Physics 1-----	3
Chemistry 1 and Chemistry 5-----	4
English 1-----	3
German 1-----	3
Military Science-----	1

Second Year

Chemistry 2-----	3
Chemistry 6-----	3-5
Physics 2 and 3-----	4
French 1-----	3
Drawing-----	1
Elective-----	3-5
Military Science-----	1

The electives are to be selected from the following: Chemistry 3 and 3l; English 2, 13; German 2; Mathematics 4a, 4b; Biology 1; Geology 1a, 1b; Economics 1; History 1a, 1b; Shop-work.

Third Year

Chemistry 3 or 4-----	2-3
Chemistry 7-----	3-5
Chemistry 11-----	2
Chemistry 15b-----	2
Elective-----	8-11
Military Science-----	1

The electives are to be selected from the following: Chemistry 3l or 4l; Mathematics 7 or 8; Geology 5a, 5b; Biology 4; German 10; Physics 7b.

Fourth Year

Chemistry 8-----	3-5
Chemistry 14b-----	2
Chemistry 15a or b-----	2
Chemistry 18 (Journal Meeting)-----	
Thesis (Chemistry 17)-----	
Elective-----	9-11

The electives are to be selected from the following:

Chemistry 4, 41, 9, 10, 12a, 16; Physics 4, 9; Biology 7, 8; Geology 5b, 6a; Mathematics 11a; English 4a; History 4a, 4b; Economics 2.

Electives other than those indicated may also be offered, subject to the approval of the student's adviser and the chairman of the college.

THE SCHOOL OF EDUCATION

The State University of Arkansas is an intergral part of the public school system of the state. As contemplated in its establishment, the work in the University is based upon the preparation afforded by the High Schools of the state, and students coming from accredited High Schools are admitted to the undergraduate and professional courses upon the presentation of the proper certificates.

The Board of Trustees of the University have authorized the establishment of a separate division of the University to be known as the School of Education. The newly erected Peabody Hall, recently completed at a cost of more than \$40,000, will accommodate the professional work of the school. The School of Education has a separate faculty consisting of a Dean, teachers of the various professional branches, trained critic teachers in the University Training School, and instructors in other departments and colleges of the University represented in the curriculum of the school.

The purpose of the School of Education is to bring together and correlate all the forces of the University which contribute in a professional way to the preparation of educational leaders in teaching and supervision of whatever grade, whether rural, elementary, secondary, or executive.

The curriculum of the School will be based upon the assumption that teachers should have, first of all, and fundamental to all other preparation, a broad and liberal education; second, that they should be the masters of some special subject which they expect to teach; and, third, that this training should be supplemented by professional education which shall give a knowledge

of the minds of the pupils to be taught, the problems to be met, and always with that most important of all features of teacher-training, a thorough course in practice teaching under skilful critic teachers.

Students who complete the undergraduate courses of the School of Education meeting only its general entrance requirements as outlined on page 23, receive the degree of Bachelor of Science in Education, while those meeting also the entrance and graduation requirements of the College of Arts and Sciences receive the degree of Bachelor of Arts.

ADMISSION

The admission requirements are 14 accredited units, of which 3 must be in English, 1 in science and 1 in history. The rest may be elective, but aside from English at least 2 minors of 2 units each must be offered. Students looking forward to primary teaching will do well to offer a unit of general science and 1 of physics, in preparation for work in nature study. A tabulated statement of entrance requirements of the University at large will be found on page 22.

REQUIREMENTS FOR GRADUATION WITH THE DEGREE OF BACHELOR OF SCIENCE IN EDUCATION

1. *General.* The candidate must meet the University requirements as to residence and registration, and must secure credit in approved courses amounting to 67 hours.

2. *Prescribed subjects.* Specifically prescribed are: English 1, 3 hours for all students; 16 hours of Education, including the 12 hours prescribed for the L. I. certificate, for all students; and military science, 3 hours, for men, or physical education, 3 hours, for women.

3. *Group requirements.* The subjects from which the student will choose his work are grouped as follows:

1. Ancient Languages (Latin, Greek), English, German, Romance Languages (French, Spanish, Italian).

2. Astronomy, Biology, Chemistry, Geology, Mathematics, Physics.

3. Economics, Education, History, Home Economics, Political Science, Philosophy, Sociology.

4. Engineering, Fine Arts, Agricultural Subjects.

In the election of studies the following rules must be observed:

1. Not more than 20 hours may be counted in any one subject, and not more than 40 hours in any group, provided that this rule may be waived by advice of the Dean.

2. At the close of the freshman year, each candidate for a degree shall select a major subject. In general, the candidate will be expected to offer not less than 12 hours in his major subject. The exact major requirements differ with the different departments; statements of the requirements are given in connection with the announcements of the various departments or may be had from the heads of departments.

3. Major subjects may be selected only from Groups 1, 2 and 3.

4. Not more than 9 hours shall be taken from Group 4, but more may be taken by permission of the Dean.

5. A minimum of 9 hours must be taken in each of Groups 1, 2, and 3.

Note: The degree of Bachelor of Arts in Education will be conferred upon all candidates for a degree who meet all the requirements of the College of Arts and Sciences.

SPECIAL EQUIPMENT FOR PEDAGOGICAL TRAINING

Peabody Hall, the newest and most modern building on the campus, is entirely used for the work in Education. It is a large and commodious building of three stories, with its more than 30 rooms planned especially for adaptation to the work of training teachers. Here are rooms for manual training and home economics, a large assembly room, rooms for the Training School, etc. A large and well lighted reading room is well furnished and is supplied with various professional books and magazines.

THE TRAINING SCHOOL

A training school for teachers forms a necessary part of the work of the School of Education. In the training school, stu-

dents specializing in the department do practice teaching under the supervision of experienced critic teachers.

In the new Peabody Building ample provision has been made for the Training School. Rooms are provided where children doing work of both elementary and high school character will be taught. A pupil from any county in Arkansas will be admitted to any class in the University Training High School who has entirely exhausted the school privileges of his home community, but not otherwise, except on the recommendation of his principal, or on examination. Pupils seeking admission to the Training School must be at least 15 years of age, and of good moral character.

SPECIAL COURSES OFFERED BY THE SCHOOL OF EDUCATION

The School of Education offers special courses, the completion of which is attested by a certificate from the University (the certificate of Licentiate of Instruction). The certificate is a license to teach in accordance with a state law which provides:

"That the diplomas from the teachers' training department of the University of Arkansas shall be equivalent to a teacher's professional license, which shall entitle the holder to teach in any public school in the state of Arkansas for a period of six years from and after the date of issue, and at the expiration of the said diploma may be converted into a life certificate, provided the character of the work done by the holder thereof, and his or her moral character, meet with the approval of the State Superintendent of Public Instruction of the State of Arkansas."

This certificate is also granted to those graduates of the College of Arts and Sciences who take major work in Education and complete not less than 16 hours' work in that department, together with other work in the College of Arts and Sciences. A certain part of these 16 hours is prescribed; the remainder, elective.

The admission requirements for these courses are given in the statement of the entrance requirements of the University, page 22. Education 1a and 20b may be elected by any freshman in the College of Arts and Sciences, and must precede most of the other courses in Education, Psychology or Philosophy.

It is urged upon all students who expect to become candi-

dates for the L. I. degree, and all who are majoring in Education, to do their practice teaching just as late in their course as possible. Course 24 is worth much more to a junior than to a sophomore, and more to a senior than to either of the others.

The requirements for the course leading to the certificate of Licietiate of Instruction are as follows:

First Year

	Hours a week
English 1 -----	3
Education 1a and 20b-----	3
Education 22a and 23b-----	2
Electives -----	10

Second Year

Education 24-----	4
Agriculture -----	3
Electives -----	11

Agriculture may be elected during the first year, if desired.

Twelve hours of credit in Education, inclusive of the courses in Education 1a and 20b are required for the L. I. degree. Sixteen hours in Education are required for the Bachelor's degree.

No student will be recommended for a teaching position in a high school who has not credit in the Psychology of Adolescence (Psychology 8a).

No student will be recommended for a position in school supervision who has not credit in School Management (Education 27a).

History 2 is strongly recommended to all who are planning to teach in the grades, as is also the teachers' course in Physical Culture, for which 1 hour of credit is given.

All work in the foregoing course may be counted as part of the 64 hours required for the Bachelor's degree.

COURSES RECOMMENDED

The following statements indicate the courses which are especially recommended for those who are preparing to teach in high schools.

BOTANY

Students who are preparing to teach Botany in the average high school are recommended to complete Botany 1, 3a, 3b, 8 11a.

CHEMISTRY

As a preparation for teaching Chemistry in high schools at least the following courses should be taken: Chemistry 1, 2, 3, 6, 11, 12a. In addition Chemistry 15 is recommended. Persons wishing to prepare for the teaching of chemistry in a college or university should consult with the head of the department of chemistry and the dean of the School of Education as to a combination of the B. S. course in chemistry with the L. I. course in Education.

ENGLISH

Preparation for the teaching of English language and literature should include not less than 6 hours of college work in elective courses above English 1 and 2. The course in the Teaching of English should be completed and some credits for elective work should be earned in literature and some in language.

GEOLOGY

Students who are preparing to teach geology in secondary schools should complete at least Geology 1, 2, 3, besides a course in the teaching of science. Students who wish to major in Geology with a view of teaching that subject as a profession should consult with the head of the department.

GERMAN LANGUAGE AND LITERATURE

Students preparing to teach German in secondary schools should complete a minimum of 9 college hours in that subject above the three entrance units submitted. A course in the Teaching of Modern Language should be included.

HISTORY

Students who expect to teach history in the secondary schools should take at least 9 hours of work in the department in the last three years of their college course. The 3-hour course in Mediaeval History extending through the freshman year ought to be the foundation for this work. History 2 or 3a and 3b,

and 5a and 5b are the next most important. Teachers will not be highly recommended for grade work without having had either 2 or 3a and 3b. American, English and general history are the subjects most emphasized in the high schools of Arkansas.

HOME ECONOMICS

The demand for teachers of Home Economics is such in Arkansas that the School of Education coöperates with the department of Home Economics of the College of Agriculture to offer a certificate of Licentiate of Instruction in Home Economics for those young women who have especially prepared themselves to teach in that field. Students in this course will take English 1, Education 1a, 20b, 22a, 23b, and 24 (which latter course is numbered H. E. 2 in the College of Agriculture), Chemistry 1, eight hours of free electives, and the following courses in Home Economics: 30a, 30b, 10a, 10b, 1a, 1b, 20a, 20b.

LATIN LANGUAGE AND LITERATURE

As a minimum for those intending to teach Latin in the smaller high schools of Arkansas the essentials are Latin 2, 4, 6. In addition the course in the teaching of Latin should always be taken. For those intending to specialize and teach in the larger high schools a major in Latin under the direction of the head of the department should be taken.

MATHEMATICS

The minimum requirement for those seeking recommendation as teachers of this branch in the high school includes two years of work in the department in addition to the entrance requirements of the College of Arts and Sciences in mathematics. In any event Mathematics 10b should be taken.

PHILOSOPHY AND PSYCHOLOGY

Psychology is the natural foundation for the study of education. Psychology 1 prepares for a teachers' examination of any grade. The student who prepares for the profession of teaching should have, in addition, probably the courses catalogued as Education 3a, either 6b or 7a, and also 21a if he is preparing for supervision. Students looking forward to a law

course should elect Education 1a, 7b, and 30a, and probably 30b as well. Those young men looking forward to the ministry should have Education 1a, 7b, and 10b, while 6b and 8a are strongly recommended. Students planning to become physicians should have Education 1a and 9b at least. After having had Education 1a the student may elect freely from the various courses offered in Psychology.

PHYSICS

Students preparing to teach physics in the secondary schools ought always to have had Physics 1, 2, 3, 13.

POLITICAL ECONOMY AND SOCIOLOGY

Students preparing to teach economics in secondary schools should take at least Economics 1, 5b, and 7, and elect at least 5 hours' additional from the work offered by the department. Practice teaching for half a year in commercial geography in the Training High School will help materially.

ROMANCE LANGUAGES

Students who expect to teach either French or Spanish should do not less than 12 hours of work in the subject chosen, and should include a teaching course. Practice teaching in the Training High School will make it possible for a recommendation to carry weight.

ZOÖLOGY

All who expect to prepare to teach zoölogy in the high schools should take during the first two years Biology 1 and 5. In addition those wishing to teach in the grades should take Biology 9 and 11a. For teaching in the larger high schools such students should have considerably more work to be decided upon in consultation with the head of the department.

SPECIAL COURSES OFFERED IN THE DEPARTMENT OF FINE ARTS

The Department of Fine Arts offers special courses, the completion of which is attested by a diploma or a certificate from the University.

The purpose of these courses is to give opportunity to persons who do not desire to become candidates for degrees, but wish to do special work in music, art, and expression, together with a

judicious amount of work of a cultural nature, in preparation for teaching or as a basis for further study.

The admission requirements for these courses are given in the statement of the entrance requirements of the University, p. 22.

SPECIAL COURSE WITH MUSIC (PIANO, ORGAN, VOICE, VIOLIN),
LEADING TO A DIPLOMA

The requirements for a diploma in music from the Department of Fine Arts include the following work in other departments of the College of Arts and Sciences:

English 1 and 2, 6 hours; Modern Language, 6 hours; History 1a and 1b or Economics 1, 3 hours.

In music courses 1, 2, 3, 4 and 5 in Group 2 are required.

For the requirements in Group 1 (Piano, Violin, Voice, etc.), no definite number of hours can be stated; the applicant must show the attainment of sufficient knowledge, technique and ability. In general this will demand four to six years of work. Finally, in addition to the study of the major instrument, the candidate must spend one year in the study of some other instrument, or of voice, and be credited by the Director.

Students entering the foregoing course are required to present 14 entrance units, two of which may be in music.

BUILDINGS, LABORATORIES AND EQUIPMENT

University Hall, erected in 1872, is the "old main building" of the University. It is five stories in height, 214 feet in length and 124 feet in depth, occupying three sides of a quadrangle. The building contains some seventy rooms. In this building are the President's offices and in it is carried on most of the work of the College of Arts and Sciences.

Biological Laboratory. The biological laboratory is situated on the second floor of University Hall, and has accommodation for about forty students. The laboratory is furnished with worktables, a sink, and the necessary gas fixtures for incubators, sterilizers, etc.; also with an aquarium for keeping aquatic animals and plants for observation and study. The equipment in apparatus consists of compound microscopes, dissecting microscopes, microtomes, and such other apparatus and chemicals as are

needed for the practical work in biology. There is also apparatus for collecting, drying, preserving and mounting insects. The laboratory has a number of skeletons of animals; and models and charts for teaching plant and animal anatomy.

Geological Laboratories. The department of geology occupies nearly all of the fourth floor of University Hall. The department is equipped with maps, relief maps, minerals and rock specimens; and with aneroid barometers, compasses, hand-levels, pedometers, etc., for field work. There is also a well equipped laboratory for determinative mineralogy.

The Museum occupies a large portion of the fourth floor of University Hall. The contents of the museum have been collected with the view of facilitating instruction in geology and biology. That portion of the collection suitable for display is arranged in glass cases, while the working collection is in drawers.

Relief Maps. There have been placed in the museum the following relief maps: Geological relief maps of the State of Arkansas, the Colorado Canyon, Central Tennessee, and the United States; a convex relief map of the United States on a section of a globe sixteen feet in diameter; relief maps of Carmel Bay, California, of Ice Springs Craters, Utah, of Yosemite Valley, of Palestine, of Mount Vesuvius, of the State of California, of San Francisco Peninsula; also a sectional geological relief map of the Leadville region, Colorado.

The Mineral Collection. The mineral collection contains about 3,000 specimens, representing the different mineral groups. Many of these specimens are displayed in cases.

The Petrographic Collection. This collection consists of a large number of specimens representing sedimentary, igneous, and metamorphic rocks. Besides, there is a large collection of building and other kinds of stone from different parts of the country.

The Paleontological Collection. There is a large collection of invertebrate fossils in the museum, representing principally the fauna of the different geological horizons in northern Arkansas.

The Major Earle Collection. Major F. R. Earle has deposited in the museum his private collection of minerals and fossils.

The Zoölogical and Botanical Collection. This collection consists of 200 birds and mammals, representing 80 species; 200 reptiles and amphibians, representing 40 species; 1,500 fishes,

representing 350 species; 1,000 insects and other invertebrates, representing 200 species; several skeletons.

Physical Laboratory. The physical laboratory is in Engineering Hall. It is equipped with modern instruments in quantity sufficient for the laboratory work of the courses in physics.

The Chemistry Building, erected in 1905, is situated north of University Hall. It is two stories high and is sixty by ninety feet. This building houses the department of Chemistry. On the first floor of the Chemistry Building are laboratories for quantitative and qualitative analysis, organic chemistry, physical chemistry; a balance room; and a library. On the second floor is a large lecture room and a general laboratory for first year students. In the basement are store rooms and a laboratory for assaying. The various laboratories are provided with work-tables, sinks, hoods, water, and gas. The department is provided with apparatus sufficient for the present needs.

The Armory is a large, well-lighted room, sixty by eighty feet, occupying the entire basement of the north wing of University Hall. It is substantially furnished with arm racks, compartments for equipment and other conveniences. The equipment of the department of Military Science and Tactics consists of 600 Krag-Jorgensen rifles; 18 gallery rifles, 1903 Springfield model; 500 sets of leather infantry equipment; signal flags; non-commissioned officers' swords; and ammunition furnished by the National Government. National colors, cadet officers' swords, and a set of band instruments have been purchased by the University.

The Practice Rooms of the department of Music are in the north wing of the fourth floor of University Hall.

DESCRIPTION OF COURSES OFFERED IN THE COLLEGE OF ARTS AND SCIENCES

Courses designated by a numeral followed by the letter *a* are given during the first semester.

Courses designated by a numeral followed by the letter *b* are given during the second semester.

Courses designated by a numeral not followed by the letter *a* or *b* are continued through both semesters. Credit for one semester's work in such courses will not be granted.

Courses designated by a numeral followed by the letter *c* are language composition courses.

Courses designated by a numeral followed by the letter *l* are laboratory courses.

The numeral in parenthesis after the name of a course indicates the number of hours of credit given for completion of the course.

ANCIENT LANGUAGES

PROFESSOR STRAUSS, ADJUNCT PROFESSOR HAWKINS

LATIN

For students entering with only two units in Latin (see page 29 of this catalogue) course A is provided. Latin 1 is intended for those who offer for entrance three units, but may be taken by well-prepared students who offer only two units.

Students presenting four units of Latin for entrance will be admitted to Latin 2. All students taking this course are advised to take Latin 2c at the same time.

Latin 1c should be taken by all students in course A or course 1. No credit for any college course in Latin will be given until the student has satisfactorily completed course 1c, or has presented evidence that he has completed an equivalent course in the preparatory school or elsewhere.

Students who desire recommendations as teachers of Latin in

high schools must have credit for Latin 2c, 2 and not less than three hours of more advanced work.

A. CICERO'S ORATIONS AND LETTERS (3)—Six orations and selections from the letters; a review of the forms; drill in the syntax of the noun and verb. (*No credit will be given for this course until course 1c, or the equivalent has been passed.*) M. W. F. 1. ADJUNCT PROFESSOR HAWKINS.

I. VERGIL'S ÆNEID (3)—Six books of Vergil's *Æneid*. Due attention will be paid to forms and syntax, but the chief aim in this course will be to enable the student to arrive at an appreciation of the poem as literature. The dactylic hexameter will be studied and read. (*No credit will be given for this course until course 1c, or the equivalent has been passed.*) M. W. F., 2. ADJUNCT PROFESSOR HAWKINS.

1C. PROSE COMPOSITION (1)—An elementary course. Required of all students in Latin A or Latin I who have not passed its equivalent. Bennett's *Latin Composition* will be completed. ADJUNCT PROFESSOR HAWKINS.

2. CICERO, OVID, AND TERENCE (3)—Cicero's *De Amicitia*; Ovid, selections; Terence, the *Phormio*; sight reading; Roman private life. *Prerequisite*: Latin 1c and either Latin A or Latin I. M. W. F. 3. PROFESSOR STRAUSS.

2C. PROSE COMPOSITION (1)—Nutting's *Supplementary Latin Composition*. *Prerequisite*: Latin 1c. Th. 3. PROFESSOR STRAUSS.

3. ROMAN PUBLIC AND PRIVATE LIFE (3)—Selections from Cicero, Pliny, Juvenal and Martial. *Prerequisite*: Latin 2. M. W. F. 4. PROFESSOR STRAUSS.

3C. PROSE COMPOSITION (1)—The translation of connected passages of idiomatic English into idiomatic Latin. *Prerequisite*: Latin 2 and 2c. W. 4. PROFESSOR STRAUSS.

4. HORACE AND TACITUS (3)—Horace's *Odes and Epodes*; Tacitus' *Annals*; parallel and sight reading; the metres of Horace. *Prerequisite*: Latin 2 and 2c. Tu. Th. 4, W. 2. PROFESSOR STRAUSS.

5. ROMAN POETRY (3)—The reading of selected portions of Roman poets from Plautus to Juvenal. An attempt will be made to secure for the student a good general review of the

whole field of Roman poetry within the limits stated. *Prerequisite:* Latin 2c, and 3 or 4. PROFESSOR STRAUSS.

6. HORACE AND VERGIL (2)—Horace, *Satires and Epistles*; Vergil, *Eclogues and Georgics*; History of Roman Literature. *Prerequisite:* Latin 2c and 3 or 4. PROFESSOR STRAUSS.

GREEK

Courses 1 and 2 are designed to give students who do not present entrance credits in Greek an opportunity to begin the study of the language. Those having an entrance credit of three units will be admitted to Greek 3.

1. ELEMENTARY COURSE (4)—White's *Beginner's Greek Book*, with selections from Xenophon's *Anabasis*. A thorough mastery of the forms and constructions given in this book is required. M. Tu. W. Th. 4. ADJUNCT PROFESSOR HAWKINS.

2. XENEPHON AND LYSIAS (4)—This course is intended to familiarize the student with all the ordinary Attic forms and constructions; frequent exercises in oral and written translations of English into Greek, based upon the text read, are given; there is some practice in sight reading. *Prerequisite:* Greek 1. M. W. Th. F. 6. ADJUNCT PROFESSOR HAWKINS.

3. HOMER AND PLATO (3)—Systematic study of the grammar; prose composition; Greek literature; sight reading. *Prerequisite:* Greek 2. M. 4, Th. F. 2. PROFESSOR STRAUSS.

4. GREEK HISTORIANS (2)—Selections from Herodotus and Thucydides. *Prerequisite:* Greek 3. PROFESSOR STRAUSS.

5. ADVANCED PROSE COMPOSITION (1)—Weekly written exercises. *Prerequisite:* Greek 3. PROFESSOR STRAUSS.

6. THE ATTIC DRAMA (3)—Readings from Æschylus, Euripides, Sophocles, and Aristophanes. *Prerequisite:* Greek 3. PROFESSOR STRAUSS.

7. NEW TESTAMENT GREEK (3)—A course for beginners. This course is designed to secure for those who have never studied Greek a reading knowledge of the New Testament. No further attention will be paid to forms and syntax than is essential. The second term will be devoted to reading the New Testament, and the work of this term may be taken by any student who is prepared for it, and credit will be given. (*Omitted in 1915-16.*) PROFESSOR STRAUSS.

8a. GREEK LITERATURE IN TRANSLATIONS ($1\frac{1}{2}$)—A study of the origin and development of epic, didactic and lyric poetry. The aim of this course is to give students of any literature a knowledge of the form and content of the literature that has influenced most widely all others. PROFESSOR STRAUSS.

8b. GREEK DRAMA IN TRANSLATIONS ($1\frac{1}{2}$)—A study of the origin and development of the Greek Drama and of its influence upon English literature. A dozen dramas or more of Aeschylus, Sophocles, Euripides and Aristophanes will be read and discussed from the points of view of content and of influence on later dramas. PROFESSOR STRAUSS.

BIOLOGY

PROFESSOR PICKEL, MR. SCHWARTZ

The courses in biology have been arranged to meet the needs of three classes of students; those who desire to become acquainted with the fundamental principles of plant and animal life; those who intend to study medicine; and those who wish to go more thoroughly into the study of biological science to obtain the technical training necessary for subsequent investigation or for teaching.

Students who make biology their major subject are required to choose from courses 1 or 2, 3, 4, 5, 6, 7, or 8 and 9, 11a or 11b.

Courses 1 or 5, 4, 6, 7, 8 or 9 are prescribed for students preparing to study medicine. Credit may be given for one semester's work in 1, 3a, 3b, 5, 11a, 11b.

1. GENERAL BIOLOGY (3)—An introduction to the whole field of biological science, with emphasis on the dynamic aspect of living things. Lectures and recitations on the structure, functions, behavior, and life history of organisms from the plant and animal kingdoms. Laboratory work on selected types. One lecture or recitation, and four hours of laboratory work. Open to all freshmen. Tu. Th. 6, 7; F. 6. MR. SCHWARTZ.

2. GENERAL BOTANY (3)—A general survey of the entire plant kingdom, with due emphasis on the application of botany to agriculture and horticulture. Lectures and recitations on plant physiology, supplemented by individual laboratory work. A brief consideration of the morphological characteristics of the

larger groups with laboratory work on suitable types. One lecture or recitation, and four hours of laboratory work. Required of all freshmen in the College of Agriculture. M. W. 5, 6; F. 5.

MR. SCHWARTZ.

3a. BIOLOGY ($1\frac{1}{2}$)—Plant morphology. Lectures and laboratory work on the structure and life histories of representative plants from the main groups. Five hours a week. *Prerequisite*: Biology 1 or 2.

MR. SCHWARTZ.

3b. BIOLOGY ($1\frac{1}{2}$)—Plant physiology. The fundamental physiological processes of plants will be considered by means of lectures, demonstrations and individual laboratory work. Five hours a week. *Prerequisite*: Biology 1 or 2 F. 4; Lab., Tu. Th. 5, 6.

MR. SCHWARTZ.

4. BACTERIOLOGY (4)—An introduction to the subject and instruction in laboratory technique—the preparation of nutrient media, the characteristics of bacteria, the kind and effects, isolating and keeping pure cultures, microscopical preparations, the study of bacteria found in soil, in water and in air; study of pathogenic forms and their relation to disease. One lecture and six hours' laboratory work a week. *Prerequisite*: Chemistry 1, Biology 1. M. 1, Tu. W. F. 2, 3.

PROFESSOR PICKEL.

5a. INVERTEBRATE ZOOLOGY ($1\frac{1}{2}$)—A general course. Attention will be given to the fundamental facts of zoological science and laws of development, heredity, variation, correlation, etc. Field work on the fauna of the locality will be conducted. One recitation and four hours' laboratory work a week. M. 4, W. F. 6, 7.

PROFESSOR PICKEL.

5b. VERTEBRATE ZOOLOGY ($1\frac{1}{2}$)—The description of Biology 5a applies generally to this course. One recitation and four hours' laboratory work a week. M. 4, W. F. 6, 7.

PROFESSOR PICKEL.

6. COMPARATIVE ANATOMY OF VERTEBRATES (3)—Recitations and demonstrations dealing with the comparative anatomy of acrania, cyclostomes, sharks, fishes, amphibians, reptiles, birds and mammals. Laboratory work on selected types of the different groups. One recitation and four hours' laboratory work a week. *Prerequisite*: Biology 1, or Biology 5a and 5b. M. 2, W. F. 1, 2.

PROFESSOR PICKEL.

7. ANIMAL HISTOLOGY AND EMBRYOLOGY (5)—This course is

offered to students intending to study medicine, but is open to any student who has completed Biology 1. It consists of instruction in histological and embryological methods of technique to acquaint the student with the principles of histology and embryology. Two lectures and six hours' laboratory work a week. *Prerequisite:* Biology 1 or 2. Tu. Th. 1, W. F. 2, 3, 4.

8. PHYSIOLOGY (4)—This course is intended for students who desire a general knowledge of physiology and personal hygiene of the human body. It is especially adapted for teachers and also recommended for students of sociology and psychology. Two recitations and four hours' laboratory a week throughout the year. *Prerequisite:* Elementary physiology. M. W. 2, 3; Tu. Th. 1.

PROFESSOR PICKEL.

9. PHYSIOLOGICAL CHEMISTRY (4)—The physiology of foods, digestion, and nutrition; the blood circulation and respiratory mechanism; the excretions, and analysis of urine; functions of brain and spinal cord; physiology of nerve and muscle. Two lectures and four hours' laboratory work a week throughout the year. *Prerequisite:* Chemistry 1 and Biology 8. M., F. 2, Tu. 2, 3.

PROFESSOR PICKEL.

10. NATURE STUDY (1)—A special course in nature study, its aim, methods, etc., and systematic science teaching will be offered to students who expect to teach. Two lectures a week. *Prerequisite:* Biology 1.

PROFESSOR PICKEL.

11a. GENERAL HYGIENE (1½)—Lectures and assigned readings dealing with personal and public hygiene. The subject is considered from a general rather than a technical standpoint and is open to all juniors and seniors in the University. Three lectures a week. No laboratory work. M. Tu. W. 2.

PROFESSOR PICKEL.

11b. THEORETICAL BIOLOGY (1½)—Lectures and recitations on some of the broader and more general problems in biology, including some consideration of the application of biological facts and principles to the solution of social problems. Some of the principal topics to be considered are variation, selection, evolution, heredity, eugenics. Open to all juniors and seniors unqualifiedly, and to sophomores who have three hours' credit in biology. M. Tu. W. 2

MR SCHWARTZ.

12a. TEACHING OF BIOLOGY (1½)—For prospective high school teachers. Selection of courses, methods of instruction,

collecting and preserving laboratory material and laboratory equipment, management, comparing of text-books, etc. Lectures and recitations three hours a week. *Prerequisite:* Biology 1, 2, 5 and 8.
PROFESSOR PICKEL.

CHEMISTRY

PROFESSOR CARROLL, ASSOCIATE PROFESSOR MORROW

The department of Chemistry offers a special course leading to the degree of B. S. in Chemistry (see page 53 for an outline of this course), which may be pursued in preparation for work in analytical chemistry, or as a basis for graduate study in chemistry or medicine.

For a major in chemistry not less than 15 hours of work in chemistry must be done. The character of the work will depend upon the student's purpose. For those who are preparing to teach chemistry in the high school, Chemistry 1, 2, 3, 3a, 6, 11, 111 are required and courses 12a and 15 are recommended. The student will also be expected to pursue certain courses in physics, mathematics and education. For students who are preparing for the study of medicine, Chemistry 1, 2, 3, 5a, 6 and 11 are prescribed and other courses are recommended, together with work in biology, physics, and modern languages. For students who are preparing for graduate work in chemistry, Chemistry 1, 2, 31, 4, 41, 5, 6, 11, 111, and 15 are prescribed. In addition the student will be expected to do much work in physics, mathematics and modern languages.

Prerequisites: Elementary (preparatory) physics, or its equivalent, is prerequisite for admission to Chemistry 1. Chemistry 1 is prerequisite to all other courses in chemistry.

1. ELEMENTARY CHEMISTRY (3-4)—Lectures and recitations two or three hours a week; laboratory exercises one afternoon a week. M. W. 3, M. W. F. 4, Tu. Th. 2, Tu. Th. 4.

PROFESSOR CARROLL.

ASSOCIATE PROFESSOR MORROW.

2. GENERAL INORGANIC CHEMISTRY (3-4)—Lectures and recitations three hours a week. Smith's *General Inorganic Chem-*

istry is the text-book used. Three hours of work are required; an additional hour is optional. M. W. F. 2.

PROFESSOR CARROLL.

2l. LABORATORY EXERCISES (1-2)—To accompany Chemistry 2. Smith's *Laboratory Outline of General Chemistry* is used as a basis for the work.

PROFESSOR CARROLL.

3a. ELEMENTARY ORGANIC CHEMISTRY (2)—Lectures and recitations twice a week. Moore's *Outlines of Organic Chemistry* is the text-book used. Tu. Th. 4.

ASSOCIATE PROFESSOR MORROW.

3b. ELEMENTARY ORGANIC CHEMISTRY (2)—Lectures and recitations twice a week. Stoddard's *Introduction to Organic Chemistry* is the text-book used. *Prerequisite*: Chemistry 1. M. W. F. 4.

ASSOCIATE PROFESSOR MORROW.

3l. LABORATORY EXERCISES IN ORGANIC CHEMISTRY (1-2)—To accompany Chemistry 3.

ASSOCIATE PROFESSOR MORROW.

4. ADVANCED ORGANIC CHEMISTRY (3)—Lectures and recitations three hours a week.

ASSOCIATE PROFESSOR MORROW.

4l. ORGANIC PREPARATIONS (1-2)—Exercises in organic chemistry, with the manuals of Gattermann, Levy, and Fischer as a basis. This course should be taken in connection with Chemistry 4.

ASSOCIATE PROFESSOR MORROW.

5a or 5b. QUALITATIVE ANALYSIS (2-3)—One lecture or conference a week, with laboratory work during either semester or throughout the year.

PROFESSOR CARROLL.

6. QUANTITATIVE ANALYSIS (2-5)—One lecture or conference a week with laboratory work, for one semester or during the year. The credit given will depend on the quality of the work and the number of determinations made. The course will be varied to suit the needs of individual students.

PROFESSOR CARROLL.

7a or 7b. QUANTITATIVE ANALYSIS (2-5)—Occasional lectures and conferences. More complicated gravimetric and volumetric processes of analysis. Credit determined as for Chemistry 6.

PROFESSOR CARROLL.

8a or 8b. QUANTITATIVE ANALYSIS (2-5)—A continuation of Chemistry 6 or Chemistry 7. The work done will be varied to suit the needs of the student. Engineering students may perform exercises in technical gas analysis, the analysis of fuels, oils, etc.

Prerequisite: At least one and one-half hours each of Chemistry 5 and 6.

9a or 9b. WATER ANALYSIS (2-3)—A course in the methods of sanitary and technical water analysis, primarily for engineering students. The discussion and interpretation of results of the various analyses will be illustrated in occasional lectures and conferences. *Prerequisite:* At least 1½ hours each of Chemistry 5 and of Chemistry 6. PROFESSOR CARROLL.

10. ELECTRO-CHEMICAL ANALYSIS (2-5)—Quantitative analysis by electrolysis. Laboratory exercises with occasional lectures during the year or either semester. PROFESSOR CARROLL.

11a or 11b. PHYSICAL CHEMISTRY (3)—Lectures three hours a week for one semester, or two hours a week for both semesters. *Prerequisite:* Chemistry I and a certain amount of Chemistry 5 and 6; Mathematics 1a and 1b; Physics I. PROFESSOR CARROLL.

111. LABORATORY EXERCISES IN PHYSICAL CHEMISTRY (2-3)—To accompany Chemistry 11. PROFESSOR CARROLL.

12a. TEACHER'S COURSE (3)—Two hours of lectures and conferences and three hours of practice a week. Designed for prospective high school teachers. *Prerequisite:* Chemistry I, 2, 3, 5, 6, 11. PROFESSOR CARROLL.

13b. ELECTRO-CHEMISTRY (3)—Elementary theoretical and applied electro-chemistry. Lectures and laboratory exercises. PROFESSOR CARROLL.

14b. HISTORY OF CHEMISTRY (2)—Lectures, assigned readings, and reports. PROFESSOR CARROLL.

15a or 15b. CHEMICAL COLLOQUIUM (2)—Readings and discussions two hours a week. Articles in German and French chemical journals are the basis of the work. PROFESSOR CARROLL.

16a or 16b. QUALITATIVE AND QUANTITATIVE SPECTRAL ANALYSIS AND COLORIMETRY (3)—One lecture a week and laboratory exercises in spectral analysis and colorimetry, during either semester. *Kruess' Kolorimetrie und quantitative Spectralanalyse* and *Formanek's Die qualitative Analyse anorganischer Koerper* will be used for reference. *Prerequisite:* Chemistry 5, Chemistry 6. PROFESSOR CARROLL.

17. INDUSTRIAL CHEMISTRY (3)—Lectures, recitations, assigned readings, and reports. *Prerequisite:* Chemistry 2, 4, 11.
ASSOCIATE PROFESSOR MORROW.

18. RESEARCH WORK—Problems in research will be given to graduate students and to others competent to undertake such work. A reading knowledge of German and French is indispensable.
PROFESSOR CARROLL.

19. JOURNAL MEETING (1)—The instructors and advanced students of the department meet twice a month for discussion of articles in the current chemical journals.

ECONOMICS AND SOCIOLOGY

PROFESSOR BROUGH, ASSISTANT PROFESSOR WATERMAN

The courses offered in this department are designed to give instruction in the fundamentals of economic theory and problems of current economic, social, and public interest, and to prepare students for the duties of citizenship and participation in the professions of law, politics, journalism, financiering and teaching—in short, for professional and business careers.

Economics 1 is a prerequisite to all courses except 2, 7, 9 and 10. Courses 6, 7, and 10 are open to juniors and seniors only.

Credit may be granted for one semester's work in 1, 2, 3, 5, 6, 7, 8, 9, and 10.

1. PRINCIPLES OF ECONOMICS (3)—Text-books: Bullock's *Introduction to the Study of Economics*, and Ely's *Outlines of Economics*, with assigned reading amounting to seventy-five pages in carefully selected works on economics outside the text-books. Sections: M. 1, Tu. 2, Th. 2; M. W. F. 2; M. W. F. 3; M. W. F. 4.
PROFESSOR BROUGH.

ASSISTANT PROFESSOR WATERMAN.

2. BUSINESS LAW (3)—In this course a study is made of the laws of Arkansas, the law of contracts, bills, checks, and notes, agency and other elements of business law. Text-books: Huffcut's *Elements of Business Law*, *Huffcut on Agency*, *Harriman on Contracts*. Tu. 6, W. Th. 1.
PROFESSOR BROUGH.

3a. RAILWAY TRANSPORTATION (1½)—The railway systems of

the United States and foreign countries; railroad geography, rate-making and government control and regulation are considered. Text-books: Johnson's *American Railway Transportation*, supplemented by assigned reading and reports. M. Tu. Th. 2.

ASSISTANT PROFESSOR WATERMAN.

3b. MONEY AND BANKING ($1\frac{1}{2}$)—The theory of money, banking and credit is considered, and current financial problems and practical banking are stressed. Text-book: White's *Money and Banking*. M. Tu. Th. 2.

ASSISTANT PROFESSOR WATERMAN.

4. INSURANCE (3)—A thorough study is made of the principles of life, fire, accident and marine insurance, of insurance policies, and the law of insurance. Text-books: Alexander's *Life Insurance Company*, and Huebner's *Property Insurance*, supplemented by assigned readings. M. W. F. 6.

ASSISTANT PROFESSOR WATERMAN.

5a. FINANCIAL HISTORY OF THE UNITED STATES, TAXATION AND PUBLIC FINANCE ($1\frac{1}{2}$)—A thorough investigation is made of the financial history of the United States, and an intensive study is made of the problems of taxation and financial administration. Text-books: Dewey's *Financial History of the United States*, and Seligman's *Essays in Taxation*, supplemented by assigned readings. M. 6, Tu. Th. 4.

PROFESSOR BROUGH.

5b. ECONOMIC HISTORY OF THE UNITED STATES ($1\frac{1}{2}$)—A comprehensive study is made of the history of our industrial evolutions. Text-book: Bogart's *Economic History of the United States*. M. 6, Tu. 4, Th. 4.

PROFESSOR BROUGH.

6. SOCIALISM AND SOCIAL REFORM (3)—A thorough study is made of the economics and politics of the Socialist movement, with a consideration of the practical problems of social reform. Text-books: Ely's *Socialism and Social Reform*. Tu., Th. 6.

ASSISTANT PROFESSOR WATERMAN.

7. SOCIOLOGY (2)—In this course the fundamental facts of social institutions are outlined, and a detailed study is made of the chief social problems of the present day. Text-book: Wright's *Practical Sociology*, supplemented by assigned readings on the family, population, immigration, etc. Tu. Th. 7.

ASSISTANT PROFESSOR WATERMAN.

8. ECONOMIC PROBLEMS (3)—Lectures, debates and discussions of the tariff, monopoly, labor, railroad, government ownership, central bank, income tax, injunction, land reform and prohibition problems. One period each week is devoted to lectures, one to debates by members of the class, and one to discussions and reports in class. Text-books: Tarbell's *Tariff in Our Times*, *Intercollegiate Debates*, Vol. 2, *The South Mobilizing for Social Service*, supplemented by assigned readings. M. Tu. Th. 5.

PROFESSOR BROUGH.

9a or 9b. ENGINEERING LAW (1½)—Elective for juniors and seniors in the courses in Engineering. This course makes a study of the legal questions involved in the work of the engineer. Text-books: Wait's *Engineering and Architectural Jurisprudence*, and Clark's *Architect, Owner and Builder before the Law*. M. W. F. 3.

PROFESSOR BROUGH.

10 ECONOMIC LAW (3)—A study of law with special reference to real estate, corporations, injunctions and evidence. Text-books: Walker's *American Law*, *Greenleaf on Evidence*, and *Arkansas Reports*. Tu. 3, W. 5, F. 3. PROFESSOR BROUGH.

THE SCHOOL OF EDUCATION

The courses of the School of Education are primarily for the professional training of teachers for elementary or secondary school work. The courses offered afford a study of the principles and processes involved in education and give practical training in the art of teaching.

In the second year of the normal course, candidates for the L. I. certificate are required to do observational and teaching work one hour each day throughout the year. The work will be so selected as to give preparation and practice in the particular kind of teaching that the candidate proposes to follow. Except in very unusual cases these courses should not be done before a student's junior year, and should always, when possible, be delayed until his senior year.

1a or 1b. GENERAL PSYCHOLOGY (1½)—This course is a prerequisite to entrance into the School of Education of every State University, is an unvarying essential in the preparation of a teacher, and its content is necessary to success in all public life.

Only the simpler aspects of mental life are dealt with. The student will not only be introduced to the field of General Psychology, but will be helped to ground himself in the fundamentals of the subject and to acquire a right attitude toward human behavior in general. This course may be elected by freshmen.

Text-book: Colvin and Bagley's *Human Behavior*. First semester, M. W. F. 1, 2, or 3; second semester, M. W. F. 7.

DEAN JEWELL.

ASSISTANT PROFESSOR JORDAN.

2a. ADVANCED PSYCHOLOGY (1½)—This course is intended to serve either as a part of a liberal education or as a preparation for the study of education, law and medicine. The subject is pursued as a science. The general principles of the thought process are emphasized. Offered especially for students bringing credit in Psychology from the high school. M. W. F. 7.

ASSISTANT PROFESSOR JORDAN.

3a. EDUCATIONAL PSYCHOLOGY (1)—The following subjects of vital importance to the teacher are considered: Sources of Interest, Instincts, Habit, Moral Training, Memory, Thinking, Attention, Imagination, and "Transfer of Training." Recommended to all L. I. students. *Prerequisite*: Education 1. Text-book: Thorndike's *Briefer Educational Psychology*. Tu. Th. 7.

ASSISTANT PROFESSOR JORDAN.

6b. GENETIC PSYCHOLOGY (1½)—An intensive study of the development of the mind. The arguments for and against the Recapitulation Theory are considered and then Child Psychology, leading toward the Psychology of Adolescence. In stating the principles of Child Psychology, a careful interpretation is made of hereditary and environment influences in their bearing upon education in the home and school. Lectures and text-book. *Prerequisite*: Education 1. Text-book: Kirkpatrick's *Fundamentals of Child Study*. (Omitted in 1915-16.)

DEAN JEWELL.

7b. SOCIAL PSYCHOLOGY (1½)—This course will give an insight into present social problems by showing how consciousness has been developed in the home, school, neighborhood and society. Among the topics studied are: Public Opinion, Custom, Imitation, Psychology of Leadership, Conflict, Discussion, Compromise, Mob Mind, Social Will, Communication and the Crowd. *Prerequisite*: Education 1 or 2. Text-book: Cooley's *Social Organization*. M. W. F. 1. ASSISTANT PROFESSOR JORDAN.

8a. PSYCHOLOGY OF ADOLESCENCE ($1\frac{1}{2}$)—This is a study of the important physical, mental and moral changes which are natural to adolescence, and will be of special interest to all who have to deal with boys and girls of high school age. Much attention will be paid to laying the foundation for the pedagogy of secondary instruction. Offered also in each Summer School. *Prerequisite*: Education 1, or 2. Text-book: Hall's *Youth*. M. W. F. 1.

DEAN JEWELL.

PROFESSOR TORREYSON.

9a. ABNORMAL PSYCHOLOGY ($1\frac{1}{2}$)—This course treats of the psychological conditions and mental phenomena of Sleep, Dreams, Aphasia, Insanity, Illusions, etc. Lectures, discussions and reports. *Prerequisite*: Education 1 or 2. Texts: Barrett's *Psychical Research*, Hyslop's *Introduction to Psychical Research*, and Coriat's *Abnormal Psychology*. (Omitted in 1915-16.)

DEAN JEWELL.

20b. HISTORY OF EDUCATION ($1\frac{1}{2}$)—Educational tendencies rather than men will be the content of this course, and at every point stress will be laid upon the connection between educational theory and actual school work in its historical development. Offered also during each Summer School. Text-book: Monroe's *Brief Course in the History of Education*. M. W. F. 1, 2 or 3.

DEAN JEWELL.

PROFESSOR TORREYSON.

ASSISTANT PROFESSOR JORDAN.

21a. PHILOSOPHY OF EDUCATION ($1\frac{1}{2}$)—Education considered from the standpoint of (1) biology, (2) neurology, (3) psychology, (4) anthropology, and (5) sociology. Representative topics: Instinct, Heredity, Habit, Culture Epochs, Individual Differences, Imitation, Suggestion, the Training of the Memory, Imagination, Emotions, Will, Senses, Motor Activities and Moral Nature, Formal Discipline, Educational Values, Social Education. *Prerequisite*: Education 1. (Omitted in 1915-16.)

ASSISTANT PROFESSOR JORDAN.

22a. THE TEACHING PROCESS (1)—This course deals with the scientific principles underlying teaching rather than with details of device and method. A careful study of this course should do much toward eliminating the waste of time and energy often involved in the work of the school. Offered also during

each Summer School. Required in the L. I. course. Text-book: Strayer's *Teaching Process*. Tu. Th. 1 or 2.

ASSISTANT PROFESSOR GRANT.

23b. OBSERVATION AND THE CURRICULUM (1)—Observations and discussions of recitations in elementary and secondary school work are required. In addition, considerable attention will be given to working out a suitable course of study. Required in the L. I. course. *Prerequisite*: Education 22a. Tu. Th. 1 or 2.

ASSISTANT PROFESSOR GRANT.

24. TEACHING (4)—Daily teaching for one hour in the Training School in practical application of the principles of instruction. Teachers' meeting one hour a week. Required in the L. I. course. Offered also during each Summer School. *Prerequisite*: Education 20b, 22a and 23b. Daily and M. 8.

ASSISTANT PROFESSOR GRANT.

MISS SANBORN.

MRS. SIMPSON.

25b. THE MODERN HIGH SCHOOL (1)—The high school; its functions; organization, management, and equipment; the principal; the teacher; the pupil; the class exercise; social life; the high school and the community; present problems. Text-book, Lectures, and References. This course is offered for teachers who expect to do High School work. Offered also during each Summer School. Text-book: Monroe's *Principles of Secondary Education*. Tu. Th. 7.

DEAN JEWELL.

PROFESSOR TORREYSON.

26b. THE ELEMENTARY SCHOOL (1)—Topics similar to those treated in Education 25 will be discussed in their relation to the elementary school. This course is offered for teachers who expect to teach in the elementary schools. Offered also during each Summer School. Tu. Th. 4.

ASSISTANT PROFESSOR GRANT.

MRS. SIMPSON.

27a. SCHOOL MANAGEMENT (1½)—This course is for those preparing to teach in the graded schools. It will include such topics as The Qualifications of the Teacher, Grading and Promotion, the Recitation, Discipline, Study and Preparation, School Incentives and the School and the Community. Text-book, Lectures and References. Text: Dutton's *School Management*, M. W. F. 7.

DEAN JEWELL.

27b. RURAL SCHOOL MANAGEMENT (1½)—This course is designed to make both the aim and methods of conducting a rural school very definite, and is designed especially for those rural teachers who have had little opportunity to see better schools than their own. The enrichment of the life of the country child will be kept in mind, and topics such as Plays and Games, Study Program, Agriculture in the School, etc., will be considered. Text: Culter and Stone's *Rural School Management*. Offered during each Summer School.

28b. COMPARATIVE SCHOOL SYSTEMS (1½)—A study of the striking features of the school systems of France, Germany, England, and the United States, appealing especially to those interested in a better supervision of schools. These countries are seeking efficiency in widely varying ways and to some extent are seeking development in varying traits in their citizens. Text, Lectures, and Library Work. Text: Hughes' *The Making of Citizens*. M. W. F. 7.
DEAN JEWELL.

30a. LOGIC (1½)—This course will not only give a foundation for any subsequent philosophical study, but the constant aim will be to throw the light of logic on the practical problems of everyday life. A careful study will be made of inductive and deductive reasoning, much attention being given to argument and debate. A good preparation for students looking toward a law course. Text-book: Hibben's *Logis—Deductive and Inductive*. Tu. Th. I.
ASSISTANT PROFESSOR JORDAN.

30b. ETHICS (1½)—After some little attention to the growth of Ethics in history this course will largely confine itself to helping the student acquire better methods of estimating and controlling conduct. Studies will be made of the moral problems that have confronted people from primitive times to the present, and of the comparisons between individual and group morality. A good preparation for students looking toward a law course. Text-book: Dewey and Tufts' *Ethics*. Tu. Th. I.

ASSISTANT PROFESSOR JORDAN.

ENGLISH.

ACTING PROFESSOR ROGER WILLIAMS, MR. WALKER, MR. EVANS,
MISS HOLCOMBE, MR. CURTIS T. WILLIAMS.

Assistants, MR. SMITH, MISS ALEXANDER.

The aim of the courses in the department of English is (1) to train students to write English clearly and correctly, and (2) to teach them to understand and to appreciate the best in literature. Every course in composition, therefore, is accompanied by a considerable amount of required readings, and every course in literature requires a certain amount of written criticism.

Students who select English as their major subject are required to take, besides English 1 and 2, twelve hours from the following courses: English 4a or 4b; two courses from English 10, 11b, and 12; and the remaining number of hours from English 3b, 4a, 4b, 5a, 6b, 7a, 8a, 9a, 10, 11b, 12, 14a, 17b, 18, 19b, 20b, 21b, 22a, 24.

Not more than one course in composition may be taken in any one year without the consent of the Department.

I. RHETORIC AND ENGLISH COMPOSITION (3)—Lectures, recitations, themes, and conferences. Practice in exposition, argumentation, description, and narration. The instruction will be based chiefly upon a study of modern masters of English prose style, and upon the student's own themes. An outline of the course will be furnished each student at the first meeting of the class. *Required of all freshmen.*

- I. M. Tu. Th. 2, MISS HOLCOMBE.
- II. Tu. Th. F. 2, MR. EVANS.
- III. M. Tu. Th. 3, MISS HOLCOMBE.
- IV. M. W. F. 3, MR. CURTIS T. WILLIAMS.
- V. Tu. W. F. 4, MISS HOLCOMBE.
- VI. Tu. W. F. 4, MR. WALKER.
- VII. M. Tu. F. 5, MR. CURTIS T. WILLIAMS.

2. HISTORY AND DEVELOPMENT OF ENGLISH LITERATURE IN OUTLINE (3)—This course is intended to give the student a general view of the history and development of English literature from Anglo-Saxon times to the end of the nineteenth century.

Selected masterpieces, representative of different periods, are studied in class. A considerable amount of outside reading and weekly reports are required. The class meets as a whole once a week for lectures on the periods in English literature and in small sections twice a week for more detailed study of the reading required. *Required of all sophomores in the College of Arts and Sciences; elective for others who have credit for English 1.*

All Sections, Tu. 3, ACTING PROFESSOR WILLIAMS and others.

- I. M. Th. 2, MR. WALKER.
- II. W. F. 3, MR. EVANS.
- III. M. Th. 4, MISS HOLCOMBE.
- IV. W. F. 4, MR. CURTIS T. WILLIAMS.
- V. W. F. 6, ACTING PROFESSOR WILLIAMS.

3b. AMERICAN LITERATURE ($1\frac{1}{2}$)—Considerable stress is laid on colonial and revolutionary literature with readings and reports on interesting material that the student finds difficulty in finding for himself. A study is then made of Irving, Cooper, Bryant, Poe, Emerson, Lowell, Longfellow, Hawthorne, Whit-tier, Holmes, and Whitman, followed by a consideration of the minor poets of the South. *Prerequisite:* English 1 and 2. Tu. Th. F. 2.

ACTING PROFESSOR WILLIAMS.

4a. ENGLISH COMPOSITION ($1\frac{1}{2}$)—This course is divided into two sections: section 1 for exposition, section 2 for argumentation. The purpose of the course is to teach advanced students the principles of exposition and argumentation and to develop reasoning power and literary style, as well as the ability to write clear and vigorous prose. As training in thorough investigation, each student is required during the semester to do extensive reading upon some subject and present the results of his work in a thesis. *Prerequisite:* English 1 and 2.

Section 1. M. W. F. 6, MISS HOLCOMBE.

Section 2. M. W. F. 1, MR. CURTIS T. WILLIAMS.

4b. THE SHORT STORY ($1\frac{1}{2}$)—The work of this course consists partly in copious reading and criticism of short stories, and partly in story writing. The purpose of the course is to give the student a sound critical knowledge of the modern short story,

and to offer practical training in the writing of fiction to those who have the necessary ability. *Prerequisite*: English 1 and 2. M. W. F. 1. MR. EVANS.

5a. A STUDY OF ENGLISH PROSE FICTION (1½)—The course involves a study of various types of prose fiction and of the personalities of the writers and the characteristics of their work. Scott, Austen, Dickens, Thackeray, Eliot, Hawthorne, Brontë, Reade, and Hardy are some of the writers studied. Lectures, reading, and critical reports. *Prerequisite*: English 1 and 2. Tu. Th. F. 2. (*Omitted in 1915-16.*)

ACTING PROFESSOR WILLIAMS.

6b. LYRICAL POETRY (1½)—A study is made of the greatest examples of lyrical poetry, not only in English but, wherever adequate translations are available, in other literatures. *Prerequisites*: English 1 and 2. M. W. F. 6. (*Omitted in 1915-16.*)

MR. WALKER.

7a. SEVENTEENTH CENTURY LITERATURE (1½)—This course includes a consideration of the works of Bacon, Browne, and Walton, and the lyrics of James I and Charles I. Lectures, assigned reading, and reports. Text-book for the lyrics: Schelling's *The Seventeenth Century Lyrics*. *Prerequisite*: English 1 and 2. (*Omitted in 1915-16.*)

MR. WALKER.

8a. EIGHTEENTH CENTURY LITERATURE (1½)—Beginning with the close of the Restoration and the literary characteristics of Dryden, the course includes the prose and poetry of the period of Classicism in English literature. It deals chiefly with the works of Defoe, Swift, Addison, Steele, Pope, Johnson, Goldsmith, and Burke. Lectures, assigned reading and reports. *Prerequisite*: English 1 and 2. M. Tu. Th. 6.

MISS HOLCOMBE.

9a. BRITISH ROMANTIC POETS OF THE NINETEENTH CENTURY (1½)—This course deals principally with the poetry of Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. Through the work of these men, is traced the development of English Romantic poetry, as related to the life and thought of the nineteenth century. *Prerequisite*: English 1 and 2. Tu. W. F. 5.

MR. EVANS.

10. CHAUCER (3)—A study of Chaucer's language and literary style for the purpose of comprehending his genius as a

poet. Text-books: Liddell's *Chaucer; Prologue, Knight's Tale*, and *Nonnes Prestes Tale*, and Skeat's *The Student's Chaucer*. Students must have the consent of the instructor before electing this course. *Prerequisite*: English 1 and 2. M. W. F. 3.

ACTING PROFESSOR WILLIAMS.

11b. ANGLO SAXON (1½)—The purpose of this course is to give students a knowledge of the earliest form of English, and constant comparison of modern English with Anglo-Saxon is made. Text-books: Bright's *Anglo-Saxon Reader*, Lounsbury's *History of the English Language*. *Prerequisite*: English 1 and 2. M. Tu. Th. 6.

ACTING PROFESSOR WILLIAMS.

12. SHAKESPEARE (3)—A critical study of six plays. *Prerequisite*: English 1 and 2. M. W. F. 3.

ACTING PROFESSOR WILLIAMS.

13. ENGLISH COMPOSITION (3)—For students in the Colleges of Engineering and Agriculture who wish further training in composition beyond English 1. *Prerequisite*: English 1. M. W. F. 3.

MR. WALKER.

14a. THE DRAMA IN ENGLAND FROM 1580 to 1642 (1½)—While the course deals chiefly with Lyly, Greene, Kyd, Peele, Marlowe, Shakespeare, Ben Jonson, Dekker, Marston, Heywood, Chapman, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, and Shirley, from a dramatic and literary point of view, a historical background will be given by lectures on the pre-Elizabethan drama as an introduction to the course proper. Lectures, readings, and reports. *Prerequisite*: English 1 and 2. M. W. F. 6. (*Omitted in 1915-16.*)

MR. WALKER.

15. THE ENGLISH BIBLE—OLD TESTAMENT (2)—The course treats briefly of the ancestry of our English Bible, the formation of the Canon, the origin, form, and contents of the several books, the political history of Israel, and the geography of Palestine. *Open to Freshmen. English 15 does not count toward fulfillment of the requirement for English as a major subject.* Tu. F. 6 or 7.

MR. DICKSON.

16a or 16b. THE ENGLISH BIBLE—NEW TESTAMENT (1)—The course is conducted on the same general plan as the course in the Old Testament. Special attention will be given to the history of New Testament times in Palestine, and a comprehensive view of each book will be given in the light of its authorship,

purpose, and history. *Open to freshmen. Course 16 does not count toward fulfillment of the requirement for English as a major subject.* M. W. 6 or 7. MR. DICKSON.

17b. BROWNING AND TENNYSON (1½)—Emphasis is placed, in this course, upon the art and thought of Browning and Tennyson, in their relation to modern life. *Prerequisite:* English 1 and 2. Tu. W. F. 5. MR. EVANS.

18. NEWSPAPER WRITING (3)—The purpose of this course is to give training in the theory and practice of newspaper work. Reporting, copy-reading and proof-reading are dealt with as practically as possible by carrying on much of the work of the class in connection with student publications and the local newspapers. No student may elect this course without the consent of the instructor. *Prerequisite:* English 1. M. W. F. 4. MR. EVANS.

19b. THE CONTEMPORARY DRAMA (1½)—A study of contemporary plays in Europe and America from the literary, dramatic, and social points of view, with discussion and illustration of dramatic principles. Some of the playwrights to whom particular attention is given are Ibsen, Hauptmann, Sudermann, Rostand, Maeterlinck, Sir Arthur Wing Pinero, Sir Arthur Jones, Galsworthy, Augustus Thomas, Fitch, and Moody. Lectures, reading, and dramatic criticism. *Prerequisite:* English 1 and 2. Tu. Th. F. 2. (*Omitted in 1915-16.*)

ACTING PROFESSOR WILLIAMS.

20b. MILTON AND DANTE (1½)—A comparative study will be made of *Paradise Lost* and *The Divine Comedy*. Texts: Masson's edition of Milton's *Poetical Works*; Carey's translation of *The Divine Comedy*. *Prerequisite:* English 1 and 2. M. W. F. 6. MR. WALKER.

21b. ESSAYISTS OF THE NINETEENTH CENTURY (1½)—Attention is given chiefly to Lamb, DeQuincey, Macaulay, Carlyle, Emerson, Newman, and Arnold. Lectures, reading, and reports. *Prerequisite:* English 1 and 2. M. Tu. Th. 6. (*Omitted in 1915-16.*) MISS HOLCOMBE.

22a. LITERARY CRITICISM (1½)—A course in the principles of literary criticism applicable to poetry, prose fiction, drama, and essay. Discussions and papers based on standard works and on masterpieces selected to illustrate and amplify general theory.

Open to graduate students and undergraduates who have had twelve hours of English literature. Tu. Th. F. 2.

ACTING PROFESSOR WILLIAMS.

23. Seminar in English literature for graduate students.

ACTING PROFESSOR WILLIAMS.

24. COMPARATIVE LITERATURE (1½)—This course deals with certain stories common to several great literatures of the world. In 1915-16 a study will be made of Marlowe's *Dr. Faustus*, Goethe's *Faust*, and the *Book of Job*. *Prerequisite*: English 1 and 2. M. W. F. 6.

MR. WALKER.

GEOLOGY AND MINING.

PROFESSOR DRAKE

As an aid in the instruction in geology, localities about the University will be cited and some field work required of students. Within easy reach from the University are found formations from the Cambro-Ordovician to the Pennsylvanian, inclusive. The Ozark plateau region about Fayetteville offers abundant opportunity for physiographic studies and stratigraphic mapping as well as paleontological studies.

Students who major in the department of Geology are required to take courses 1a, 1b, 2, 3, 5a, 5b, 6a, 7 and 4a, or Mining 16, and to prepare, in their senior year, a report including maps, sections, and other necessary illustrations of some area where they have worked out the geology.

For general culture, courses 1a, 1b, and 2 are recommended. For students in agriculture, courses 1a, 1b, and 6a, are recommended. Students who are preparing themselves to teach geography and physiography are expected to complete courses 1a, 1b, and 3. For students in civil engineering, courses 1b, 5a and 6a are recommended.

1a. METEOROLOGY AND GEOGRAPHY (1½)—An elementary course. Emphasis will be placed upon the study of the causes of movements of the atmosphere and waters of the oceans and the distribution of heat over the earth. The influence of climate and the environments of land and water upon plant and animal life. M. Tu. W. 3, 6, 7.

1b. DYNAMICAL AND STRUCTURAL GEOLOGY (1½)—The materials of the earth; the geologic work of the atmosphere, water, and glaciers; disastrophism and vulcanism. Text-book: Chamberlain and Salisbury's *College Geology*. M. Tu. W. 3, 6, 7.

2. HISTORICAL GEOLOGY (3)—The origin of the earth; earth history; the evolution of life. Text-book: Same as for geology 1b. *Prerequisite*: Geology 1b. M. Tu. W. 2.

3. PRACTICAL GEOLOGY (Either one or both terms) (1½ or 3)—Field and laboratory work nine periods a week with the construction of geological maps and sections. *Prerequisite*: Geology 1b.

4a. PALEONTOLOGY (1½)—Recitations, field and laboratory work involving the collection of a local fauna and its study. *Prerequisite*: Geology 2. Text-books: Shimer's *An Introduction to the Study of Fossils*.

5a. CRYSTALOGRAPHY AND MINERALOGY (1½)—Lectures and recitations three hours a week on the elements of geometric crystallography, followed by laboratory work on the determination of minerals. *Prerequisite*: Solid Geometry and Chemistry 1. Th. F. 5, 6, 7, and 8.

5b. DETERMINATIVE MINERALOGY AND BLOW-PIPE ANALYSIS (1, 1½ or 2)—(This course is also offered the first term in order to accommodate civil engineering students). Determination of minerals by the blow-pipe and in the wet way. Text-book: Roger's *Study of Minerals*. *Prerequisite*: Chemistry 1. Th. F. 5, 6, 7, 8.

6a. ECONOMIC GEOLOGY (1½)—The formation modes of occurrence, uses, and geographic distribution of economic geologic products. *Prerequisite*: Chemistry 1, Geology 1b, Geology 5b.

7. PETROLOGY (3)—Microscopical and macroscopical determination of minerals and rocks; classification of igneous rocks. *Prerequisite*: Geology 5a, 5b

GERMAN

PROFESSOR BRISCOE, ASSOCIATE PROFESSOR LENTZ

The aim of the courses in German is to acquaint the student with the German language and literature as a means of culture.

An effort is made to create a German atmosphere for the class room, and to give the student a knowledge of the history, customs, and institutions of the German people. Consideration is given to the needs of those students who wish to learn the language for use in other fields of knowledge. Major students will be required to do not less than eighteen hours in German. Students desiring a recommendation to teach should complete courses 1, 2, 2c, 3, 4, 5.

1. ELEMENTARY GERMAN (3)—Grammar, composition, reading of easy texts with conversation. Reproduction of assimilated texts. M. W. F. 1, M. W. F. 3, Tu. Th. F. 6.

ASSOCIATE PROFESSOR LENTZ.

1d. ELEMENTARY GERMAN (5)—This course is intended for students who are deficient in language work, for those who have had some German in the high school but who are not able to enter German 2, and for those who wish to specialize in this language. The course will be given according to the Direct Method and prepares students for German 2c and 3. M. Tu. W. Th. F. 4.

PROFESSOR BRISCOE.

2. MODERN GERMAN PROSE (3)—Reading of prose from nineteenth century authors, such as Storm, Heyse, Hauff, Baumbach, Freytag. Practice in conversation with text as basis; study of German idioms; written and oral reproduction of text read and assimilated. M. W. F. 3; Tu. W. F. 7.

PROFESSOR BRISCOE.

ASSOCIATE PROFESSOR LENTZ.

2c. GERMAN COMPOSITION (2)—A thorough review of grammar is attempted with a systematic introduction of new principles in composition. Tu. Th. 1.

ASSOCIATE PROFESSOR LENTZ.

3. GOETHE AND SCHILLER (3)—The study of the lives and selected works of these authors. Collateral reading and reports. *Prerequisite:* German 1, 2, 2c. M. Tu. Th. 2.

ASSOCIATE PROFESSOR LENTZ.

4. GERMAN COMPOSITION AND CONVERSATION (3)—Drill in writing and speaking German based on texts concerning the geography, history, customs, and institutions of the German people. This course is suited especially to those students who intend to teach the language. M. W. F. 2. *Prerequisite:* German 1, 2, 2c.

PROFESSOR BRISCOE.

5a. HISTORY OF GERMAN LITERATURE (3)—The history of German literature to the middle of the eighteenth century, with reading of modern German translations from *Ulfilas*, the *Lay of Hildebrand*, the *Eddas*, the *Heliand*, Otfried's *Book of the Gospels*, Konrad's *Rolandslied*, the *Nibelungenlied*, *Gudrun*, Heinrich von Veldeke's *Eneid*, Hartmann von Aue's *Armer Heinrich*, Wolfram von Eschenbach's *Parzival*, Gottfried von Strassburg's *Tristan*, Walther von der Vogelweide. *Prerequisite*: German 1, 2, 2c, 3. M. Tu. Th. 7. PROFESSOR BRISCOE.

5b. HISTORY OF GERMAN LITERATURE (3)—The history of German literature from the middle of the eighteenth century to the present. A study of literary movements. Reading of selected works from the principal writers of the period. Lectures, collateral readings, and reports. *Prerequisite*: German 1, 2, 2c, 3. M. Tu. Th. 7. PROFESSOR BRISCOE.

6. SCIENTIFIC GERMAN (2)—Rapid reading of texts on a variety of subjects, such as Chemistry, Physics, Geology, Mathematics. *Prerequisite*: German 1, 2.

7. GERMAN LYRIC AND BALLAD POETRY (2)—Lyrics and ballads of the eighteenth and nineteenth centuries. Collateral readings and reports. *Prerequisite*: German 1, 2, 2c, 3. (*Omitted in 1915-16.*)

8. THE GERMAN NOVEL (2)—Study of the novel from its origin to the present. Extensive reading with reports. Students who elect this course must be able to read German with ease. *Prerequisite*: German 1, 2, 2c, 3. (*Omitted in 1915-16.*)

9. THE GERMAN DRAMA OF THE NINETEENTH CENTURY (2)—Study of selected works from Kleist Grillparzer, Hebbel, Ludwig, Wildenbruch, Sudermann, Hauptmann, Fulda. *Prerequisite*: German 1, 2, 2c, 3. PROFESSOR BRISCOE.

10. ADVANCED COMPOSITION (2)—Original compositions, letter writing, commercial correspondence. One long theme a week is required of members of this class. These compositions will be discussed in the class and errors of syntax and style pointed out. *Prerequisite*: German 1, 2, 2c, 3, 4.

ASSOCIATE PROFESSOR LENTZ.

11. MIDDLE HIGH GERMAN (2)—Grammar and selected readings. PROFESSOR BRISCOE.

12. ADVANCED GERMAN GRAMMAR (2)—A systematic study

of Modern German Grammar. Intended primarily for students who are preparing themselves to teach German. Lectures and discussions. (*Omitted in 1915-16.*)

13. GERMAN CONVERSATION (4)—Two hours credit will be given on this course. Little outside preparation necessary. (*Omitted in 1915-16.*)

14. CURRENT PUBLICATIONS (2)—Reading and discussion of articles in the leading German periodicals.

PROFESSOR BRISCOE.

HISTORY AND POLITICAL SCIENCE

PROFESSOR THOMAS, ASSISTANT PROFESSOR MURPHY

The courses in this department are designed to afford general culture, and in addition are essential to those who are looking to law, journalism, politics, the ministry, or any other public calling. History 1a and 1b are foundation work and should be taken in the freshman year. Other courses except History 2 are not open to freshmen. At least fourteen hours will be required of majors in history.

1. MEDIEVAL HISTORY (3)—This course is designed to give the student a knowledge of the essential contributions of the ancient world to history, of the reorganization of German society upon the basis of Græco-Roman civilization, and the beginnings of the modern states, the Renaissance, the Reformation, the great religious wars, absolutism, the contest for supremacy on the high seas, the French Revolution, and the democratic movements of the nineteenth century. English history also will be emphasized, about one period a week being devoted to it. All students seeking a liberal education, or expecting to teach history, should take this course. Text-books: Robinson's *History of Western Europe*; Cheyney's *Short History of England*; Richardson's *Syllabus*. Tu. Th. 2, PROFESSOR THOMAS. M. F. 2, M. F. 4, M. F. 6, ASSISTANT PROFESSOR MURPHY. All sections meet Wednesday, the fifth period.

2. HISTORY OF THE UNITED STATES TO 1914 (3)—This course is intended for those who expect to teach American history in the high schools. All students must supply themselves with Mc-

Kinley's *Illustrated Topics for American History*, Garner's *American Government*, and some standard history of the United States. They are also expected to keep in touch with present day history through current periodicals. Those who take History 2 will not receive credit in History 3. M. W. F. 3.

ASSISTANT PROFESSOR MURPHY.

3a. THE UNITED STATES, 1776-1837 (1½)—After a brief survey of the antecedents of the Revolution a careful study will be made of the Confederation, the formation of the Constitution, the careers of the Federalist and Republican parties, expansion, the settlement of the West, tariff and financial legislation, special attention being given to the growth of nationality and of democracy. Intended for students wishing a more intensive course in modern history, or who expect to choose history for their major. M. W. F. 4.

PROFESSOR THOMAS.

3b. THE UNITED STATES SINCE 1837 (1½)—Special attention will be given to the gradual sectionalization of the country over slavery and states' rights, the results of the Civil War and Reconstruction, the industrial and social developments of recent times, and the growth of democracy. Much library work will be required. M. W. F. 4.

PROFESSOR THOMAS.

15a. AMERICAN NATIONAL GOVERNMENT (1)—A basic course for more advanced work in government. Some attention will be given to the organization of our national government and to the work of the co-ordinate branches, but most emphasis will be laid upon the work of administration. W. F. 2.

PROFESSOR THOMAS.

15b. AMERICAN STATE AND LOCAL GOVERNMENT (1)—A brief review of the development of American state constitutions, followed by a study of the structure and workings of state governments as organized today and of some of the practical problems now before the states. County and municipal government, with most attention to the latter. Text-books, lectures, and library work. W. F. 2.

PROFESSOR THOMAS.

5a. ENGLAND FROM THE EARLIEST TIMES TO 1485 (1½)—A general cultural course treating the political, the literary, the religious and economic activities of the people. The origin and growth of the more important institutions such as the kingship,

parliament, courts, the church and the struggle for constitutional government will be studied. Tu. W. Th. 1. (*Omitted 1915-16.*)

ASSISTANT PROFESSOR MURPHY.

5b. ENGLAND FROM 1485 TO THE PRESENT TIME (1½)—A continuation of History 5a. Special attention will be given to the Renaissance, the Reformation, the struggle for constitutional and democratic government, the industrial revolution, and the founding of the British Empire. Tu. W. Th. 1. (*Omitted 1915-16.*)

ASSISTANT PROFESSOR MURPHY.

6a. NATIONAL GOVERNMENT (1½)—A study and comparison of the structure and powers of the national governments of England, the United States, France, Germany, and Switzerland. Special emphasis will be given to the place of the federal system in public law. This course will be based on the works of Ogg, Beard, Garner, Burgess and the constitutions of the different countries. M. W. F. 3.

PROFESSOR THOMAS.

6b. INTERNATIONAL LAW (1½)—A brief sketch of the history of international law, and a study of the principles now considered binding on civilized nations. For juniors or seniors who have had at least three hours of history. Considerable library work will be required. M. W. F. 3.

PROFESSOR THOMAS.

7a. FRENCH REVOLUTION AND THE NAPOLEONIC ERA (1)—France on the eve of the Revolution; French political philosophers; causes and events of the Revolution, and the wars of Napoleon. Tu. Th. 4.

ASSISTANT PROFESSOR MURPHY.

7b. DEMOCRATIC MOVEMENT IN THE NINETEENTH CENTURY (1)—A brief survey of Europe in 1815 will be made, after which will be considered the development of constitutional government; the unification of Italy and Germany; and the present condition of world politics. T. Th. 4.

ASSISTANT PROFESSOR MURPHY.

8a. ENGLAND UNDER THE TUDORS AND THE STUARTS (1½)—A study of the political, religious, literary, and economic history of England during the two periods. *Prerequisite:* History 1a and 1b, or History 2, or junior standing. Tu. W. Th. 1.

ASSISTANT PROFESSOR MURPHY.

8b. THE BRITISH EMPIRE (1½)—While a brief survey of the general history of England through the eighteenth and nineteenth centuries will be made, attention will be devoted mainly to a study

of England's colonial history and of the forces that have developed the British Empire of today. An analysis of the present imperial policy will be given. A library and lecture course. *Prerequisite*: History 1a and 1b or junior standing. Tu. W. Th. 1.

ASSISTANT PROFESSOR MURPHY.

9a. HISTORY OF GREECE (1)—This course is designed to give a more extensive knowledge of the history and institutions of the Greeks. A general knowledge of the subject is presumed. Tu. Th. 4. (*Omitted 1915-16.*)

PROFESSOR THOMAS.

9b. HISTORY OF ROME (1)—The explanations made above in regard to the history of Greece apply to this course. Tu. Th. 4. (*Omitted 1915-16.*)

PROFESSOR THOMAS.

10. CURRENT HISTORY (1)—A library course in contemporary history. The student will use some of the best daily papers, the standard weekly and monthly magazines, including some foreign periodicals, and annual publications, such as the *Statesman's Year Book*, the *American Year Book*, *Annual Register*, *International Year Book*, *World's Almanac*, maps, encyclopedias, and general histories. Each student will take up some problem of today and trace its historical setting. There will be frequent conferences with instructors and weekly reports on topics. Tu. 3.

PROFESSOR THOMAS.

ASSISTANT PROFESSOR MURPHY.

4a. AMERICAN LEGISLATURES (1)—The composition and working organization, the national and state legislatures, with major emphasis upon the latter. Some of the practical problems now before the states will be taken up and special attention will be given to the work of the Arkansas legislature. (*Omitted 1915-16.*)

PROFESSOR THOMAS.

4b. POLITICAL PARTIES (1)—The organization and practical workings of political parties, national, state and local. The caucus, the convention, the boss, the primary; the legal control of parties. Lectures, readings and reports. W. F. 2. (*Omitted 1915-16.*)

PROFESSOR THOMAS.

13a. THE UNITED STATES 1763-1789 (1)—The colonies in their relations to the mother country with special reference to the attempt at imperial taxation. Particular attention will be given to the literature of the period as preparing the colonists for separation. The steps leading to the Declaration of Independence will be traced in detail; also the failure of the Confederation and

the formation and adoption of the Constitution. *Prerequisite:* 6 hours of history. Tu. Th. 4. PROFESSOR THOMAS.

13b. THE CIVIL WAR AND RECONSTRUCTION (1)—The first part of this course will deal mainly with the events leading up to the war; the second, with political, economic and social phases of Reconstruction. *Prerequisite:* 6 hours of history. Tu. Th. 4. PROFESSOR THOMAS.

14. RECONSTRUCTION IN ARKANSAS (Seminar) (1)—A study from original sources of the history of Reconstruction in typical counties of Arkansas. Students will gather in the summer the data from county records, newspaper files, interviews, etc., and after numerous conferences with the instructor the following year they will prepare papers or monographs.

PROFESSOR THOMAS.

MATHEMATICS AND ASTRONOMY

PROFESSOR DROKE, ASSOCIATE PROFESSOR DUNN, ASSOCIATE
PROFESSOR HARDING, MR. TURNER

Students who major in mathematics must take Mathematics 3, 5, 6, 8, and 9, or their equivalent. Mathematics 20, 21, 22, 23, 24, 25, 26, 27, may be elected by graduate or undergraduate students.

MATHEMATICS

0. ALGEBRA (3)—Required of engineering students who present less than one and one-half entrance units in Algebra. Text-book: Wells' *Advanced Course in Algebra*.

ASSOCIATE PROFESSOR HARDING.

1a. ALGEBRA (1½)—Text-book: Same as in Math. 0. M. W. F. 1; M. W. F. 4.

PROFESSOR DROKE.

ASSOCIATE PROFESSOR DUNN.

MR. TURNER.

1b. SOLID GEOMETRY (1½)—Text-book: Wentworth's and Smith's *Solid Geometry*. M. W. F. 1, M. W. F. 4.

PROFESSOR DROKE.

ASSOCIATE PROFESSOR DUNN.

MR. TURNER.

2a. PLANE TRIGONOMETRY ($1\frac{1}{2}$)—Text-book: Harding and Turner's *Plane Trigonometry*. Tu. W. Th. 2, 3.

ASSOCIATE PROFESSOR DUNN.

ASSOCIATE PROFESSOR HARDING.

MR. TURNER.

2b. ANALYTIC GEOMETRY ($1\frac{1}{2}$)—Text-book: Fine and Thompson's *Coördinate Geometry*. Mathematics 1a and 1b, 2a and 2b are required of freshmen in the courses in engineering in the order given, but any one of these courses may be elected in either the first or second semester by freshmen of other departments. Tu. W. Th. 2, 3. *Prerequisite*: Mathematics 1a and 2a, or 3.

ASSOCIATE PROFESSOR DUNN.

ASSOCIATE PROFESSOR HARDING.

MR. TURNER.

3. ALGEBRA, SOLID GEOMETRY, PLANE TRIGONOMETRY (4)—About twelve weeks are given to each subject, Algebra coming first. This course is required of freshmen in the College of Arts and Sciences. (It is not compulsory for women.) Tu. W. Th. F. 6.

PROFESSOR DROKE.

MR. TURNER.

4a. ALGEBRA (continuation of 1a) ($1\frac{1}{2}$)—Required of sophomore engineering students. M. W. F. 2, 4.

ASSOCIATE PROFESSOR DUNN.

ASSOCIATE PROFESSOR HARDING.

4b. ANALYTIC GEOMETRY (continuation of 2b) ($1\frac{1}{2}$)—Required of sophomores in the courses in engineering. M. W. F. 2, 4.

ASSOCIATE PROFESSOR DUNN.

ASSOCIATE PROFESSOR HARDING.

5. ANALYTIC GEOMETRY (3)—Elective for B. A. students. *Prerequisite*: 1a and 2a, or 3. M. W. F. 2.

PROFESSOR DROKE.

6. ALGEBRA (continuation of the Algebra of Mathematics 3) (2)—Elective for sophomores in the College of Arts and Sciences. Tu. Th. 2.

ASSOCIATE PROFESSOR DUNN.

7. DIFFERENTIAL AND INTEGRAL CALCULUS (3)—Required of sophomore engineering students. Text-book: Townsend and Goodenough's *Essentials of Calculus*. *Prerequisite*: Mathematics 1a, 1b, 2a and 2b. M. W. F. 1, 4.

PROFESSOR DROKE.

ASSOCIATE PROFESSOR HARDING.

8. DIFFERENTIAL AND INTEGRAL CALCULUS (4 or 5)—Elective for B. A. juniors and seniors, required of those who major in Mathematics. Text-book: Granville's *Calculus*. *Prerequisite*: Mathematics 3 and 5. M. Tu. Th. F. 7.

9. THEORY OF EQUATIONS (3)—Required of those majoring in Mathematics. Text-book: Burnside and Panton's *Theory of Equations*. M. W. F. 3.

9a. THE HISTORY OF TEACHING OF MATHEMATICS (1 or 1½)—Those majoring in mathematics should take this course. *Prerequisite*: Mathematics 5. M. W. F. 3.

10a. ALGEBRA AND PLANE TRIGONOMETRY (2)—In Algebra this course includes factoring, fractional equations, theory of exponents, radicals and quadratic equations; in trigonometry, trigonometric functions, solution of right triangles, relations among the trigonometric functions, functions of multiple and sub-multiple angles, and solution of triangles. Required of all sophomores in the College of Agriculture. Tu. W. Th. F. 5.

10b. TEACHING OF ELEMENTARY AND HIGH SCHOOL MATHEMATICS (1½).

11. SPHERICAL GEOMETRY, ANALYTICAL TRIGONOMETRY AND SPHERICAL TRIGONOMETRY (3)—*Prerequisite*: Mathematics 3.

12a. ELEMENTARY MECHANICS (2)—This course deals with the application of Mathematics to Mechanics. A study of the laws of statics and dynamics, forces, motion of particles, friction, work, energy, etc. *Prerequisite*: Mathematics 4a, 4b, 7. Elective for juniors in all the colleges. Tu. W. Th. F. 4.

13 a or b. MODERN PURE GEOMETRY (1½)—Books of reference: Godfrey and Siddon's *Modern Geometry*, and Askwith's *Pure Geometry*. This course will include the discussion of the theorems of Ceva and Menelaus, harmonic sections, pole and polar, orthogonal circles, and circle of Apollonius, Ptolemy's theorem, coaxial circles, inversion, projection, and cross ratio. These subjects will be treated in an elementary way. All those who are preparing to become teachers of Mathematics in high schools will find this course very helpful. *Prerequisite*: Mathematics 1a and 1b, 2a and 2b.

20. DIFFERENTIAL EQUATIONS (3)—Text-book: Murray's *Differential Equations*.

21. ANALYTIC GEOMETRY OF THREE DIMENSIONS (3)—Books

of reference: C. Smith's and Frost's *Solid Geometry*; Salmon's *Geometry of Three Dimensions*.

22. THEORETICAL MECHANICS (3)—*Prerequisite*: Mathematics 8 and 12.

23. ADVANCED CALCULUS (3)—*Prerequisite*: Mathematics 8.

24. ADVANCED ALGEBRA (2)—*Prerequisite*: Mathematics 6.

25. ELEMENTARY ANALYSIS (3)—A study of some of the fundamental notions of Analysis. Text-book: Hardy's *A Course in Pure Mathematics*.

26. PROJECTIVE GEOMETRY (3)—Projective forms, the principle of duality, projectives, harmonic sections, conic sections, algebra of points, etc. Text-book: Veblen and Young's *Projective Geometry*.

ASTRONOMY

16. ELEMENTARY DESCRIPTIVE ASTRONOMY (3)—Lectures and recitations with occasional meetings at night for observation. This course does not presuppose a knowledge of college mathematics and is open to freshmen in all the colleges. M. W. F. 6.

17. MATHEMATICAL ASTRONOMY (3)—Astronomical coördinates, parallax, time, determination of latitude, etc. Open to students who have completed Mathematics 3 and 16.

27. CELESTIAL MECHANICS (3)—Central forces, potential and attraction of bodies, the problem of two bodies, etc. *Prerequisites* Mathematics 16 and 20.

MILITARY SCIENCE AND TACTICS

FRED. W. BOSCHEN, *First Lieutenant 17th Infantry, U. S. A., Professor of Military Science and Tactics*

The act of Congress donating public lands for educational purposes requires that institutions which are the beneficiaries of such donations include military science and tactics in their course of instruction.

The purpose of the military department is three-fold:

1. By a system of military exercises to reach the entire male student body of the University (a great number of whom do not

take part in college athletics) and to build up the physique of the student, giving him a correct carriage and manly bearing.

2. By a modified form of military discipline to promote habits of neatness, order, punctuality, respect for authority, for the sovereign laws of the state, and the rights of others.

3. By training the student in the use of arms and the duties of the soldier to imbue him with ideas of patriotism and loyalty to his state and to the Union.

In accordance with the acts of Congress, the regulations of the University require all male students, not physically disabled (except members of the senior class, with whom military instruction is optional), to take the practical course in military science and tactics.

INSTRUCTION IN MILITARY SCIENCE AND TACTICS

The system of instruction closely follows that used in the United States Army, and is arranged in two courses, as follows:

1. THEORETICAL.—Lectures and instruction in Infantry Drill Regulations; Field Service Regulations; Manual of Guard Duty; Firing Regulations for Small Arms.

2. PRACTICAL.—The instruction covers the mechanisms of infantry drill, Butt's rifle drill, bayonet exercise, calisthenic exercises, signalling, practical demonstrations in first aid to the injured, and field exercises.

The cadets are organized into one batallion, composed of a field staff, a band and four companies. The officers and non-commissioned officers of the cadet batallion are selected from those cadets who are most proficient in their drill, most military in their bearing and most exemplary in their conduct and general deportment. The captains and lieutenants are taken from among those members of the senior class who elect drill, and from the junior class, and the sergeants and corporals from the junior and sophomore classes, respectively.

The band constitutes one of the most interesting and instructive features of the military organization and takes part in all military ceremonies.

The students of the senior class who have shown the greatest interest and efficiency in the department, are reported by name to the Adjutant General of the Army, and to the Adjutant Generals of the States of which such graduates are residents. The Presi-

dent of the United States, in appointing officers to the regular army from civil life, gives preference to those whose names are so recorded, by exempting them from examination in certain subjects.

INSPECTION

Under the authority of the President of the United States the military department of the University is inspected every year by an army officer specially detailed for this purpose.

EQUIPMENT

Each male student, matriculating at the University for the first time, is required to supply himself with a new uniform, complete, consisting of the following articles:

One blouse, cadet gray; one pair of trousers, cadet gray; one cap, cadet gray; one shirt, flannel, cadet gray; four pairs of gloves, white cotton; four collars, linen.

The contract for supplying the above named articles is let each year by the Board of Trustees to the lowest and best bidder, and the goods are delivered to the cadets by the agent of the successful bidder, subject to approval of the Commandant as to fit, quality and workmanship.

The contract price for the year 1914-15 was \$17.60 for each student for the entire equipment.

PHYSICS

PROFESSOR RIPLEY, MR. BROWN

The courses in physics are suited to the needs of the students in agriculture, arts and engineering, of students who propose to teach the science, and of students who intend to do graduate work in physics.

I. GENERAL PHYSICS (3)—Recitations two hours a week, with two hours laboratory work. Required of students in the courses in engineering, agriculture, and in the B. S. C. course. Recitations Tu. Th. 4, PROFESSOR RIPLEY; recitations Tu. Th. 1, Tu. Th. 2, MR. BROWN. Laboratory: M. W. F. 5-7, PROFESSOR RIPLEY; Tu. Th. 5-7 and Sat. 8-10, MR. BROWN.

2. GENERAL PHYSICS (3)—A continuation of Physics 1. Lectures and recitations three hours a week. Special attention given to mechanics, heat and electricity. Required in the electrical engineering and B. S. C. courses; elective for other students who have had Physics or its equivalent. M. W. F. 1.

MR. BROWN.

3. PHYSICAL LABORATORY (1)—Laboratory work, two hours a week, to accompany Physics 2. Determination of moment of inertia, tension, center of mass, coefficient of friction, Young's modulus, thermal expansion, heats of fusion and vaporization, capacity, high and low potentials, photometry, etc. F. 6-7.

PROFESSOR RIPLEY.

4. MECHANICS (4)—A development of the theory of mechanics from the physical standpoint, with practical applications. Either one or two semesters' work may be elected. *Prerequisite:* Physics 2. M. Tu. W. F. 1.

PROFESSOR RIPLEY.

5. EXPERIMENTAL PHYSICS (4)—Lectures and recitations, with demonstrations and experiments three hours a week. Practical problems and the application of physical laws and principles to everyday life. Open to all students. M. W. F. 3 and M. W. F. 5-7, PROFESSOR RIPLEY. M. W. F. 2, and Tu. Th. 5-7 or Sat. 8-10, MR. BROWN.

6. HOUSEHOLD PHYSICS (6)—Recitation four hours a week, laboratory work two hours a week throughout the entire year. This course is required of all students in domestic science. M. Tu. W. Th. 4.

PROFESSOR RIPLEY.

7a. or 7b. HEAT ($1\frac{1}{2}$)—Five hours a week, for the most part laboratory work. *Prerequisite:* Physics 2. Tu. Th. 4.

PROFESSOR RIPLEY.

8a or 8b. ELECTRICAL MEASUREMENTS (1)—Recitation one hour a week with four hours of laboratory work. Calibration of instruments, measurements of resistance of conductors and dielectrics, measurements of current, electromotive force, inductance and capacity. *Prerequisite:* Physics 1 and 3.

MR. BROWN.

9a or 9b. LIGHT (1)—Two hours class work a week, treating of the modern theory of light and modern advances in this kind of physics. Four hours a week for laboratory work in spec-

troscopy, the use of the photometer, optical bench, interferometer, optical pyrometer, etc. PROFESSOR RIPLEY.

10a. MATHEMATICAL PHYSICS, KINETIC THEORY OF GASES ($1\frac{1}{2}$)—Three hours of class work a week, treating of the application of the theory to diffusion and pressure of gases, to viscosity of liquids and gases, and to temperature and specific heats of gases and metals. The past fruitfulness of the theory in invention and discovery will be indicated, and its promise in these lines will be discussed. MR. BROWN.

10b. MATHEMATICAL PHYSICS, THE ELECTRON THEORY ($1\frac{1}{2}$)—Three hours a week class work treating of the application of the theory to the phenomena of radio-activity, of ultra violet light, of gaseous ionization and of metallic conduction. The light thrown upon the structure of the atom, together with some of the theories of atomic constitution and their practical bearings will be discussed. *Prerequisite:* Physics 1, 5 and 2 and Mathematics 7. The last named course may be taken simultaneously with this course. MR. BROWN.

11. MOLECULAR PHYSICS (2)—For students in Chemistry. Osmosis, vapor density, diffusion, electro-chemistry. *Prerequisite:* Physics 1. PROFESSOR RIPLEY.

12a or 12b. THERMODYNAMICS ($1\frac{1}{2}$)—Three hours' a week class work including consideration of the two laws of Thermodynamics, Carnot's theorem, Reech's theorem, reversible and irreversible changes, change of state formulæ, with applications, such as variations of elasticity with temperature, action of galvanic cells and thermo-couples. *Prerequisite:* Physics 1 and 2 and Mathematics 7. MR. BROWN.

13. THE TEACHING OF PHYSICS—A course for prospective teachers in secondary schools. Discussions of methods of teaching physics, of text-books and laboratory manuals, with reports on assigned topics. *Prerequisite:* Physics 1, 2 and 3. PROFESSOR RIPLEY.

14. RECENT ADVANCES IN PHYSICAL SCIENCE—Lectures and recitations on the electron theory, conduction of electricity through gases, radio-activity, etc. PROFESSOR RIPLEY.

PHYSICAL EDUCATION

(For Women)

MISS MILLER

The purpose of the work in this department is to improve the standard of the general health and to increase the physical efficiency of the young women of the University. A physical examination is made of each student upon entrance and at such intervals as may seem necessary.

The work is conducted in the indoor gymnasium and during suitable weather on outdoor courts. The uniform consists of a white middie-blouse, black serge bloomers, and gymnasium shoes.

Physical Education is required of all women students during their first two years of residence at the University. One unit of credit is given for two hours of work a week throughout the school year. A maximum of four units of credit in Physical Education may be used toward a degree.

1. ELEMENTARY COURSE (I)—General gymnastic work, gymnasium games, lectures on personal hygiene. (Required.) M. Th. 2, 6, 7; M. W. 3, 4; Tu. F. 3, 6.

2. INTERMEDIATE COURSE (I)—(I) General gymnastics, continuation of Physical Education 1. One hour a week. (II) Basketball, indoor baseball, and tennis. One hour a week. (III) Aesthetic and folk dancing. One hour a week. (Required: either I and II or I and III.) *Prerequisite*: Physical Education 1. Tu. Th. 4; W. F. 2; Tu. F. 7.

3. ADVANCED GYMNASTICS (I)—A continuation of 2a. Fencing, field sports, and out-of-door games. *Prerequisite*: Physical Education 1 and 2.

4. ADVANCED DANCING (I)—*Prerequisite*: Physical Education 1 and 2.

5. TEACHER'S COURSE (I)—Theory and practical work, for public school teachers. *Prerequisite*: Physical Education 1 and 2. College credit allowed seniors.

ROMANCE LANGUAGES

PROFESSOR MARINONI, MISS HARGIS

The courses offered by the department of Romance Languages are intended to give students an intimate acquaintance with the languages spoken in the principal Latin countries and to stimulate knowledge and appreciation of the literary attainments of the Latin peoples. In the higher courses emphasis is laid especially on the study of literature. In order to give students an opportunity to become familiar with the spoken idioms, several of the advanced courses are conducted in the language which forms the object of study.

Major students in the department of Romance languages upon completing the required work, are expected to have a fair speaking knowledge of at least one language. They are therefore urged to take in their second or third year of work the conversation courses offered by the department.

If French is selected as the major study, the student will be required to take all the courses offered by the department.

A student intending to do major work in Romance languages is expected to take French 1, 2, 3, 4, 5, Italian 1 and 2 and Spanish 1, or Spanish 1 and 2 and Italian 1.

FRENCH

1. ELEMENTARY FRENCH (3)—Grammar, reading, recitation, composition. Pronunciation is carefully taught and oral drill insisted upon. Text-books: Giese's *French Method*, Aldrich and Foster's *French Reader*. M. W. F. 1; M. Tu. Th. 2; M. W. F. 6.

MISS HARGIS.

2. FRENCH PROSE AND POETRY (3)—Composition, sight reading, Syntax, conversation. Cameron's *French Composition* and reading of representative works of modern French authors. M. W. F. 3.

MISS HARGIS.

3. FRENCH CONVERSATION.—There are two meetings of the class during the week, for which one hour's credit is given. *Prerequisite*: French 1. Tu. Th. F. 4.

MISS HARGIS.

4. FRENCH LITERATURE OF THE SEVENTEENTH CENTURY (3)—The aim of this course is to obtain a general view of the classic

periods of French literature. The most important literary productions of the century will be read and analyzed. Considerable outside reading will also be assigned. Lanson's *Histoire de la littérature française* and texts from Delagrave's *Classiques français*. This course is conducted in French. M. W. F. 3.

PROFESSOR MARINONI.

5. HISTORY OF FRENCH LITERATURE IN THE NINETEENTH CENTURY (3)—Lectures, with reading of the leading authors of the Romantic period. Lanson's *Histoire de la littérature française*. This course will be conducted in French. M. W. F. 6.

PROFESSOR MARINONI.

6. MODERN FRENCH POETRY (1)—A study of the evolution of French poetry from 1850 to the present time. New tendencies in poetry and the reaction against Romanticism as shown in the works of Leconte de Lisle and other Parnassians. Walch's *Anthologie des poètes français contemporains*.

PROFESSOR MARINONI.

7. FRENCH DRAMA (3)—The evolution of French Drama from the origins to the present day. Lectures, outside reading, reports. The course is conducted in French. M. W. F. 4.

PROFESSOR MARINONI.

8. HISTORICAL FRENCH GRAMMAR (1)—The text used will be either Brunot's *Historical French Grammar* or Darmesteter's *Cours de grammaire historique*.

PROFESSOR MARINONI.

ITALIAN

1. ELEMENTARY COURSE (3)—Grammar, composition, dictation, conversation. Marinoni's *Grammar and Reader*. Wilkins and Altrocchi's *Italian Short Stories*. Tu. W. Th. 2.

PROFESSOR MARINONI.

2. ADVANCED COURSE (3)—Syntax, composition, conversation, reading of representative modern works. Marinoni's *Selections from G. Carducci*; selections from the works of Foscolo, Leopardi, Manzoni. The second term will be devoted to the study of Dante's *Inferno* (Grandgent's edition). M. W. F. 4.

PROFESSOR MARINONI.

SPANISH

1. ELEMENTARY COURSE (3)—Grammar, composition, dictation, conversation. Reading of easy texts. Loiseaux's *Grammar*;

Taboada's *Cuentos alegres*, Padre Isla's *Gil Blas*. M. W. F. 5.
PROFESSOR MARINONI.

2. MODERN SPANISH (3)—Syntax, composition, conversation, reading of representative modern works. The course is conducted largely in Spanish. M. W. F. 7.

PROFESSOR MARINONI.

3. GENERAL VIEW OF SPANISH LITERATURE (3)—Lectures, reports, and reading of standard works. The course is conducted in Spanish. Tu. Th. 3.

PROFESSOR MARINONI.

4. CONVERSATION AND COMPOSITION IN SPANISH (2).

PROFESSOR MARINONI.

DEPARTMENT OF FINE ARTS

HENRY DOUGHTY TOVEY, *Director and Instructor in Piano, Organ, Theory, History of Music, and Counterpoint.*

ELIZABETH GALBRAITH, *Instructor in Art.*

WILLIE VANDEVENTER CROCKETT, *Instructor in Vocal Expression and Literary Interpretation.*

MARY CUMMINGS BATEMAN, *Instructor in Vocal Music*

EVELYN METZGER, *Instructor in Art.*

MABEL BELL, *Instructor in Piano.*

EUNICE OATES, *Instructor in History of Music.*

OWEN MITCHELL, *Instructor in Piano.*

In the Department of Fine Arts are grouped courses in instrumental music (piano, organ and violin), vocal music, art, and expression. Special courses in music, leading to a certificate, are offered. For a statement of the requirements of these courses see page 62. For a statement of the admission requirements see page 22. For fees see page 40.

A maximum of 9 hours' credit towards the B. A. degree is allowed from the divisions of the Theory and Practice of Art and of Expression, not more than 6 hours of which may be selected from any one division.

MUSIC

The courses in music are planned on broad lines, with the view of fitting pupils for careers as teachers and artistic concert performers.

Group 1

PIANO

MR. TOVEY, MISS BELL, MR. MITCHELL

The aim of the courses in piano music is to develop technical control and power of musical conception as adapted to artistic ends.

Any course in piano may be divided, and credit may be obtained for one semester's work.

In general outline the courses are as follows:

1. PREPARATORY GRADE—National Graded Course Books I and II; simple exercises for wrist development, major scales, broken chords, and arpeggios. Sonatinas by Diabelli, Clementi, Kuhlau, Lichner; studies from Koehler, Biehl, Loeschorn, Czerny, Gurlitt; salon pieces; preparatory octave work.

2. INTERMEDIATE GRADE (2)—Selected technics from Tausig, Krauss, Heller, Loeschorn, *Op. 66*; Czerny, *Op. 299*; sonatas by Mozart, Haydn, Beethoven; Mendelssohn's *Songs without Words*; Smith and Low's *Octave Studies*; duets for piano and piano and violin; Bach's *Little Preludes and Fugues*.

3. ADVANCED GRADE (2)—Extended scales in various accents; diminished and dominant seventh arpeggios; etudes from Czerny, *Op. 740*; Heller, *Op. 45*; Cramer; Clementi's *Gravitas ad Parnasum*; Kullak's *Octave Studies*; Bach's *Suites, Preludes, Fugues*; Chopin, *Op. 10* and *Op. 25, Valses, Preludes, Nocturnes*; Beethoven, *Sonatas*; compositions by Mendelssohn, Schumann, Schubert, Liszt, Grieg, MacDowell, and other modern composers.

4. ACCOMPANIMENT AND ADVANCED PIANO STUDY (2).

5. TEACHERS' COURSE (2)—Pupils preparing to teach will be given special work.

MR. TOVEY.

PIPE ORGAN

The aim of the instruction in pipe organ is to fit pupils to hold church positions. A knowledge of organ playing will also be helpful to those who intend to be professional musicians.

1. PIPE ORGAN (2)—The preliminary organ work is based on Ritter's *Organ School* and Thayer's *Pedal Studies*. Then follow Buck's *Studies in Pedal Phrasing*, Bach's *Little Preludes and Fugues*, and selections from composers for the organ, such as Guilmant, Lemare, Tours, Hollins, Rheinberger, and others.

MR. TOVEY.

VOICE

The purpose of instruction in this branch of music is the correct production of tone and the building and development of the voice according to the old Italian method. Special stress is laid on breath control, accuracy of tone, distinct articulation, the study of intervals, scale building, sight reading, and phrasing.

In general outline the courses are as follows:

1. PREPARATORY GRADE—Marchesi's *Individual Exercises*; Panofka's *Vocalises*, Op. 85. Studies in sight reading and easy songs.

MRS. BATEMAN.

2. INTERMEDIATE GRADE (2)—Concone, Op. 12, Marchesi's *Individual Exercises*; Panofka's *Vocalises*, Op. 81; Sieber's *Vocalises*, Op. 94; Concone's *Lessons*, Op. 17, and songs of moderate difficulty, including oratorio selections.

MRS. BATEMAN.

3. ADVANCED GRADES (2)—Lamperti's *Studies in Bravura*. Oratorio and opera arias and more difficult songs by English, French, Italian, and German composers.

MRS. BATEMAN.

VIOLIN

The instruction in violin music is designed to form correct technique. In outline the courses are:

1. FIRST AND SECOND GRADES—Studies by Dancla and Dont.

2. THIRD AND FOURTH GRADES (2)—Studies by Kayser, Kreutzer, and Schradick.

3. FIFTH AND SIXTH GRADES (2)—Studies by Kreutzer, Fiorillo and Rode.

In addition to the studies, the pupil is given compositions of the standard composers for the violin.

Group 2

1. HARMONY (first year) (1)—Keys, scales, and signatures; simple part writing; chords of the seventh and their inversions; altered and augmented chords; modulation. MR. TOVEY.

2. HARMONY (second year) (1)—Modulation continued; suspensions; passing chords; unharmonic notes; organ point; harmonization of melodies; playing of figured bases; double chants, chorals. The text-books in the courses in Harmony are Emery's *Harmony* and Krebs' *Manual of Modulation*. MR. TOVEY.

3. HISTORY OF MUSIC (1)—Music among ancient peoples; early church music; the development of polyphonic music and dramatic music; the development of instrumental music and the evolution of musical instruments. The development of the opera and oratorio. Modern music and musicians. Text-book: Hamilton's *Outlines of the History of Music*. MISS OATES.

4. OPERA STUDY (1)—The librettos and stories of various standard operas are studied. Concerts are given weekly, consisting of selections from the operas as embodied in Victor talking machine records of great singers, together with piano accompaniments. Text-books: Upton's *Opera Stories* and the *Victor Book of Operas*. MR. TOVEY.

5. COUNTERPOINT (1)—The first semester, single counterpoint in all forms, two and three voices; the second semester, single counterpoint in four voices, and double counterpoint, all forms.

THEORY AND PRACTICE OF ART

MISS GALBRAITH, MISS METZGER

The plan of incorporating a practical school of drawing and painting in a college course has been demonstrated as not only possible but very successful. The studio work is conducted in the same manner as in the purely technical art schools, while the students have the advantage of doing regular college work which renders them more sensitive to artistic impressions.

No tuition is charged for any of the courses.

A studio fee of two dollars will be charged all students except those taking public school drawing (Art 5).

The courses offered are as follows:

1. PICTORAL COMPOSITION ($1\frac{1}{2}$)—Study and practice in composing a picture. One original composition is required each week. Three hours a week. MISS GALBRAITH.

2a. THEORY OF DESIGN (1)—Two hours of theory and practice of design and two hours' instruction and practical application of the principles of design to definite problems. MISS METZGER.

2b. THEORY OF DESIGN (1)—A continuation of Art 2a. MISS METZGER.

3. DRAWING FROM CASTS, LIFE, PERSPECTIVE PROBLEMS, ETC. ($2\frac{1}{2}$)—Five hours a week. MISS GALBRAITH.

4. PAINTING STILL LIFE, LANDSCAPE, WITH WORK IN ORIGINAL COMPOSITION ($2\frac{1}{2}$)—Five hours a week. MISS GALBRAITH.

5. COURSE IN PUBLIC SCHOOL DRAWING FOR NORMAL STUDENTS (2)—This course includes a critical study of the theories and methods of teaching drawing in the public schools. The instruction is conducted upon pedagogic principles. Three periods a week, one of two consecutive hours, and two of one hour each. M. 4, 7. MISS METZGER.

6. HISTORY OF ART (2 or 3)—A study of the history of architecture, sculpture and painting. A course intended to develop an appreciation of the masters. Students will take history in connection with appreciation. Prints, photographs, and lantern slides will be used. M. W. F. 7. MISS GALBRAITH.

EXPRESSION

MRS. CROCKETT

The courses in expression are designed to be a means of personal culture. They aim to secure naturalness in reading and speaking and freedom from self-consciousness. Attention is given to voice culture and correct articulation.

The credit allowed toward the B. A. degree is not to exceed

6 hours. Such credit will not be allowed on both Expression 3 and Expression 5.

1a. VOCAL EXPRESSION, VOICE AND BODY (1)—This course deals with the fundamental principles involved in the correct use of voice and body in speaking and reading. Tu. F. 2; M. F. 4.

1b. VOCAL EXPRESSION, READING ALOUD (1)—Accuracy of observation and care in analysis are the principal objects, together with the ability to read aloud simply, easily, and naturally. The readings are taken from such works as the Old Testament, Emerson's essays, Longfellow's poems, and Shakespeare's plays. Expression 1a and 1b are open only to a limited number of students. Students are advised to take these courses in preparation for Expression 2a. Tu. F. 2; M. F. 4.

2a. THE TEACHING OF READING (1)—This course is designed primarily for public school teachers, and aims to give a definite, practical method of instruction which shall apply to each grade. Admission to this course may be obtained only by special consent of the instructor. Tu. Th. 4.

3. VOCAL INTERPRETATION (2)—An advanced course in the vocal interpretation of literature. Designed particularly for those who intend to teach English literature. Especial attention is given to the study of Tennyson, Browning, and of the dramatic monologue; of forms of literature; of literary analysis. *Prerequisite:* Expression 1a and 1b. Tu. Th. 1.

4. DRAMATIC INTERPRETATION OF SHAKESPEARE'S PLAYS (2)—A careful analysis and reading of three or four plays. At the end of the year one of the plays will be given in costume by members of the class. Students in this course are advised to take English 12. *Prerequisite:* Expression 1a and 1b. M. Th. 6.

5. VOCAL EXPRESSION AS AN ART (1 or 2)—Students prepare selections and present them before the class for criticism. Impersonation, gesture, dialect, reading, recitation, the preparation of programs, and "cutting" and adapting selections for the platform receive special attention. Enrolment only by special permission of the instructor. *Prerequisite:* Expression 1a and 1b.

6. THE APPRECIATION OF THE DRAMA.—The drama is studied as a branch of literature. Frequent readings by the instructor from masterpieces of the drama are given before the class. Members of the class take part in the presentation of plays. The class is affiliated with the *Drama League of America*, and follows the plans for study offered by the League through its bulletins.

THE COLLEGE OF ENGINEERING

The purpose of the College of Engineering is to prepare young men for the profession of engineering. To this end four-year courses are offered in civil, electrical, mechanical, mining and chemical engineering, each leading to the appropriate bachelor's degree. A fifth year's work leads to a graduate degree.

ADMISSION

For the admission requirements of the College of Engineering see the general statement of the entrance requirements of the University, page 22. For the conditions of admission for special students see page 37.

COURSES OF STUDY

Following are statements of the various four-year courses in engineering. The first year is the same in all the courses, with the exception noted below.

FRESHMAN YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Mathematics 1a, Algebra.....	3	Mathematics 1b, Solid Geometry 3	
Mathematics 2a, Plane Trig- onometry	3	Mathematics 2b, Analytic Geom- etry	3
English 1, Rhetoric and Com- position	3	English 1, Rhetoric and Compo- sition	3
Physics 1, General Physics.....	3	Physics 1, General Physics.....	3
M. E. 10, Drawing.....	2	M. E. 10, Drawing	2
*M. E. 2, 3, Shopwork.....	2	M. E. 2, 3, Shopwork.....	2
Military Science.....	1	Military Science.....	1

*For M. E. 2, 3, Shopwork, students in the course in Civil Engineering substitute M. E. 11, Lettering; students in Chemical Engineering substitute Chemistry 1, elementary Chemistry.

COURSE IN CIVIL ENGINEERING FOR THE DEGREE OF B. C. E.

SOPHOMORE YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Mathematics 4a, Algebra.....	3	Mathematics 4b, Analytic Geometry	3
Mathematics 7, Calculus.....	3	Mathematics 7, Calculus.....	3
C. E. 6, 7, Surveying.....	3	C. E. 6, 7, Surveying.....	3
C. E. 3a, Descriptive Geometry..	2	C. E. 3b, Descriptive Geometry..	2
C. E. 5a, Highways.....	2	C. E. 4b, Architectural Drawing	2
Chemistry 1, elementary		Chemistry 1, elementary	
Chemistry	3	Chemistry	3
Military Science.....	1	Military Science.....	1

JUNIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
C. E. 14, Structural Mechanics....	5	C. E. 14, Structural Mechanics....	5
C. E. 10, Railroad Engineering..	2	C. E. 10, Railroad Engineering..	2
C. E. 11, Field Practice	2	C. E. 11, Field Practice	2
Geology 5b, Blow-pipe Analysis..	2	M. E. 27b, Hydraulics.....	2
C. E. 13, Technical Drawing.....	2	C. E. 13, Technical Drawing.....	2
Elective	3	Elective	3
Military Science.....	1	Military Science.....	1

SENIOR YEAR

First Semester		Second Semester.	
	Hours a Week		Hours a Week
C. E. 16, Roofs and Bridges.....	4	C. E. 16, Roofs and Bridges.....	3
C. E. 15a, Masonry Construction	2	C. E. 17, Technical Drawing.....	2
C. E. 17, Technical Drawing.....	2	C. E. 18b, Waterworks Engi- neering	3
C. E. 18a, Sanitary Engineering..	2	C. E. 20b, Field Practice	2
C. E. 19a, Engineering Labora- tory	2	Elective	3
C. E. 20a, Reinforced Concrete....	2	Thesis	2
Elective	3		

COURSE IN CHEMICAL ENGINEERING FOR THE DEGREE OF B. CH. E.

SOPHOMORE YEAR

First Semester.		Second Semester.	
	Hours a Week		Hours a Week
Chemistry 2, Inorganic Chemis- try	3	Chemistry 2, Inorganic Chemis- try	3
Chemistry 5a, Qualitative Analy- sis	3	Chemistry 6b, Quantitative Anal- ysis	3
Mathematics 4a, Algebra	3	Mathematics 4b, Analytic Geom- etry	3
Mathematics 7, Calculus	3	Mathematics 7, Calculus	3
German 1, Elementary German or Physics 2, General Physics..	3	German 1, Elementary German or Physics 2, General Physics..	3
M. E. 2, 3, Shop Work.....	3	M. E. 2, 3, Shop Work.....	3
Military Science	1	Military Science	1

JUNIOR YEAR

First Semester.		Second Semester	
	Hours a Week		Hours a Week
Chemistry 4, Organic Chemistry	4	Chemistry 4, Organic Chemistry	4
Chemistry 7, Quantitative Analysis	3	Chemistry 7, Quantitative Analysis	3
Chemistry 11, Physical Chemistry	2	Chemistry 11, Physical Chemistry	2
M. E. 14, Machine Design	3	M. E. 14, Machine Design	3
M. E. 22a, Theoretical Mechanics	4	M. E. 22b, Mechanics of Materials	4
Military Science	1	Military Science	1

SENIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Chemistry 17, Industrial Chemistry	3	Chemistry 17, Industrial Chemistry	3
E. E. 1, Electrical Engineering	3	E. E. 1, Electrical Engineering	3
E. E. 19, Electrical Laboratory	2	E. E. 19, Electrical Laboratory	2
M. E. 17, Experimental Engineering	2	M. E. 17, Experimental Engineering	2
M. E. 24a, Steam Engines and Boilers	3	M. E. 24b, Steam Engines and Boilers	3
Elective	5	Elective	5
Thesis		Thesis	

COURSE IN ELECTRICAL ENGINEERING FOR THE DEGREE OF B. E. E.

SOPHOMORE YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Mathematics 4a, Algebra	3	Mathematics 4b, Analytic Geometry	3
Mathematics 7, Calculus	3	Mathematics 7, Calculus	3
Physics 2, General Physics	3	Physics 2, General Physics	3
Physics 3, Physical Laboratory	1	Physics 3, Physical Laboratory	1
Chemistry 1, Inorganic Chemistry	3	Chemistry 1, Inorganic Chemistry	2
E. E. 2, Drawing	2	Chemistry 5, Qualitative Analysis	1
E. E. 20, Illuminating Engineering, or E. E. 11, Telegraphy, Telephony, and Signals	2	E. E. 2, Drawing	2
Military Science	1	E. E. 20, Illuminating Engineering, or E. E. 11, Telegraphy, Telephony and Signals	2
		Military Science	1

JUNIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
English 13, English Composition, or German 1, elementary Ger- man, or French 1, elementary French, or Spanish 1, elemen- tary Spanish	3	English 13, English Composition, or German 1, elementary Ger- man, or French 1, elementary French, or Spanish 1, elemen- tary Spanish	3
M. E. 24a, Steam Machinery.....	3	M. E. 25b, Oil and Gas Machn- lery	3
Physics 4, Mechanics, or C. E. 14, Structural Mechanics, or M. E. 22a, Theoretical Me- chanics	4	Physics 4, Mechanics, or C. E. 14, Structural Mechanics, or M. E. 23b, Mechanics of Mate- rials	4
E. E. 7, Dynamo Machinery.....	3	E. E. 7, Dynamo Machinery	3
E. E. 5, Electrical Laboratory ...	2	E. E. 5, Electrical Laboratory....	2
E. E. 3, Electrical Design	2	E. E. 3, Electrical Design	2
Military Science	1	Military Science	1

SENIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
E. E. 8a, Alternating Currents..	3	E. E. 9b, Polyphase Currents.....	3
E. E. 6, Electrical Laboratory....	2	E. E. 6, Electrical Laboratory....	2
E. E. 4, Electrical Design	2	E. E. 4, Electrical Design	2
M. E. 17, Experimental Engi- neering	2	M. E. 17, Experimental Engi- neering	2
*Elective		*Elective	
E. E. 13a, Power Stations	2	E. E. 14b, Electrical Transmis- sion	2
E. E. 15a, Alternating Current Motors	2	E. E. 16b, Hydro-Electric Devel- opments	2
Economics 9a, Engineering Law	3	Economics 9b, Engineering Law..	3
E. E. 12a, Telephone Laboratory	1	E. E. 4b, Photometry.....	2
E. E. 18, History of Engineering	2	C. E. 8b, Surveying.....	3
		E. E. 10b, Electric Railways.....	2

*Of the electives enough must be chosen to make the total numbers of hours sixteen.

COURSE IN MECHANICAL ENGINEERING FOR THE DEGREE OF B. M. E.

SOPHOMORE YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Mathematics 4a, Algebra	3	Mathematics 4b, Analytic Geom- etry	3
Mathematics 7, Calculus	3	Mathematics 7, Calculus.....	2
Chemistry 1, Inorganic Chemis- try	3	Chemistry 1, Inorganic Chemis- try	2
C. E. 3a, Descriptive Geometry....	2	Chemistry 5, Qualitative Analy- sis	1
M. E. 4 and 5, Forge and Ma- chine Shop	2	M. E. 4 and 5, Forge and Ma- chine Shop	2
M. E. 14, Machine Design	3	M. E. 14, Machine Design	4
Military Science	1	C. E. 8b, Surveying.....	2
		Military Science	1

JUNIOR YEAR

First Semester

	Hours a Week
M. E. 22a, Theoretical Mechanics or C. E. 14, Structural Mechanics	4
M. E. 24a, Steam Engines and Boilers	3
M. E. 17, Experimental Engineering	2
M. E. 12a, Mechanical Drawing	2
Shop Work	2
Elective	3
Military Science	1

Second Semester

	Hours a Week
M. E. 22b, Mechanics or C. E. 14, Structural Mechanics	4
M. E. 24b, Gas Engines and Producers	3
M. E. 17, Experimental Engineering	2
M. E. 15b, Machine Design	4
M. E. 27b, Hydraulics	2
Elective	1
Military Science	1

SENIOR YEAR

First Semester

	Hours a Week
E. E. 19, Electrical Laboratory ..	2
E. E. 1, Electrical Engineering ..	3
M. E. 26, Machine Design	4
M. E. 18, Experimental Engineering	2
M. E. 28a, Hydraulic Machinery ..	2
Elective	3

Second Semester

	Hours a Week
E. E. 19, Electrical Laboratory ..	2
E. E. 1, Electrical Engineering ..	3
M. E. 26, Machine Design	4
M. E. 18, Experimental Engineering	2
Elective	4
Thesis	1

COURSE IN MINING ENGINEERING FOR THE DEGREE OF B. M. E.

SOPHOMORE YEAR

First Semester

	Hours a Week
Chemistry 1, General Chemistry ..	3
Mathematics 4a, Algebra	3
Mathematics 7, Calculus	3
Geology 1a, Geography	3
Geology 5a, Crystallography	3
Foreign Language	3
Military Science	1

Second Semester

	Hours a Week
Chemistry 1, General Chemistry ..	3
Mathematics 4b, Analytic Geometry	3
Mathematics 7, Calculus	3
Geology 1b, Dynamic and Structural	3
Geology 5b, Mineralogy	3
Foreign Language	3
Military Science	1

JUNIOR YEAR

First Semester

	Hours a Week
Chemistry 5a, Qualitative Analysis	3
Geology 2, Historical Geology	3
Geology 6a, Economic Geology	3
C. E. 6, 7, Surveying	3
E. E. 1, Electrical Engineering ..	3
Foreign Language	3
Military Science	1

Second Semester

	Hours a Week
Chemistry 6, Quantitative Analysis	3
Geology 2, Historical Geology	3
Mining 1b, Mining Operations	3
C. E. 6, 7, Surveying	3
E. E. 1, Electrical Engineering ..	3
Foreign Language	3
Military Science	1

SENIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Geology 7, Petrology.....	3	Geology 7, Petrology.....	3
Mining 2a, Ore Dressing.....	3	Metallurgy 1b, General Metal- lurgy	3
C. E. 3a, Descriptive Geometry ..	2	Metallurgy 2b, Assaying.....	1
C. E. 15a, Masonry Construction ..	2	C. E. 3b, Descriptive Geometry..	2
Chemistry 7, Quantitative Analysis	2	M. E. 27b, Hydraulics	2
Foreign Language	3	Foreign Language	3
Elective	3	Elective	3

COURSE IN HIGHWAY ENGINEERING FOR THE DEGREE OF B. C. E.
IN HIGHWAYS

FRESHMAN YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Mathematics 1a, Algebra	3	Mathematics 1b, Solid Geometry ..	3
Mathematics 2a, Trigonometry....	3	Mathematics 2b, Analytic Geom- etry	3
English 1	3	English 1	3
Chemistry 1	3	Chemistry 1	3
C. E. 2, Drawing and Lettering..	2	C. E. 2, Drawing and Lettering..	2
Economics 1	3	Economics 1	3

SOPHOMORE YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Mathematics 4a, Algebra	3	Mathematics 4b, Analytics	3
Mathematics 7, Calculus	3	Mathematics 7, Calculus	3
C. E. 6 and 7, Surveying.....	3	Surveying (C. E. 6 and 7).....	3
C. E. 3a, Descriptive Geometry..	2	Chemistry 5 and 6, Qualitative and Quantitative Analysis.....	4
C. E. 5a, Highways	2	Physics 1, General Physics.....	3
Physics 1, General Physics.....	3		

JUNIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
C. E. 14, Structural Mechanics....	5	C. E. 14, Structural Mechanics ..	5
C. E. 10a, Railroad Engineering ..	2	M. E. 27b, Hydraulics	2
C. E. 11a, Field Practice	2	C. E. 22b, Highway Engineer- ing	4
Geology 5, Blowpipe Analysis....	2	C. E. 13, Technical Drawing.....	2
C. E. 13, Technical Drawing.....	2	M. E. 24, Gas Engines and Road Machinery	3
M. E. 24, Steam Engines and Boilers	3		

SENIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
C. E. 16, Roofs and Bridges.....	4	C. E. 23b, Highway Bridges and Culverts	4
C. E. 15a, Masonry Construction ..	2	Economics 3, Law of Contracts..	3
C. E. 17, Technical Drawing.....	2	Chemistry 8, Oils and Bitumens..	3
C. E. 19a, Engineering Labora- tory	2	C. E. 24b, Highway Engineering and Materials Laboratory.....	2
C. E. 20a, Reinforced Concrete....	2	Geology 1, General Geology.....	3
Geology 1, General Geology.....	3	*Thesis	1
*Thesis	1		

*Including inspection trips and reports.

REQUIREMENTS FOR THE GRADUATE DEGREES IN ENGINEERING

The degrees of C. E., E. E., M. E., and Ch. E. may be conferred on students who follow the corresponding undergraduate courses with a year of graduate work in the College of Engineering.

The graduate courses will comprise a principal subject, based on the undergraduate course already pursued, and two subordinate subjects, one or both of which must be closely related to the principal subject. The graduate course must amount to not less than fifteen hours a week as counted in undergraduate work. Candidates for these degrees must also present a satisfactory thesis.

These degrees will be given also to graduates of the University in civil, electrical, mechanical and chemical engineering who have been in successful practice of their profession for three years, and who present a statement of their work, together with a satisfactory thesis.

TRADE COURSE

The University of Arkansas offers to the young men of the state short and trade courses as follows:

- Architectural Drawing.
- Automobile Machinists' Course.
- Mechanical Drawing.
- Pattern Making.
- Power Plant Engineering
- Short Course in Electrical Engineering.
- Short Course in Civil Engineering.

For entrance to the short course in engineering and the trades courses a fair common school education is all that is necessary.

A special bulletin describing trades courses and short courses in Engineering is issued by the University and may be had by writing to the President of the University.

EQUIPMENT

Civil Engineering Laboratory and Equipment. The instrument laboratory for this department is situated on the first floor of Engineering Hall, and is provided with all the necessary instruments for work in land, railroad, and city surveying and office work. The equipment of field instruments has been so selected as to afford students the opportunity of becoming familiar with the instruments of the different manufacturers. Among the instruments there are a number of engineers' transits and Y levels, theodolites, transit and solar attachment, compasses, hand levels, standard and ordinary steel tapes, plane tables, sextant, aneroid and mercurial barometers, etc. An equipment for practical astronomy has been added, consisting of a large altazimuth, reading to seconds by levels and micrometers; a sidereal clock with break-circuit attachment; and a chronograph reading to tenths of seconds.

The laboratory for testing materials of construction and for work in experimental hydraulics is situated in the northwest corner of the basement of Engineering Hall. It is a well lighted room having a floor space of 2,450 square feet.

The equipment for testing the quality and strength of cements and mortars includes on 2,000-pound tension machine, one 1,000-pound automatic machine, brass molds for tension compression, and transverse test pieces, storage tanks and apparatus for testing fineness, specific gravity and activity, and for accelerated tests.

For steel testing the laboratory contains a 4,000-pound tension machine and a 5,000-pound transverse machine for tests on bars, and a Fremont impact testing machine.

The equipment for experiments in hydraulics consists of a Pelton water wheel, a hydraulic engine, water meters, weirs, and other apparatus.

The laboratory is also well equipped for making blue and brown prints of any size up to 36 by 64 inches.

New equipment for testing materials for roads and pavements has recently been added. This equipment is modeled after that used in the laboratory of the Office of Public Roads at Washing-

ton, D. C., and includes an impact testing machine, a cementation impact testing machine, a diamond core drill and press, a briquette machine, a ball grinding machine, a rattler for paving brick, an abrasion machine for broken stone, and other apparatus.

Electrical Engineering Laboratories. The dynamo laboratory affords excellent facilities for experimental work with practical machinery. It is situated in the east end of the basement of Engineering Hall.

The power is supplied by a 30-horsepower, vertical type, double cylinder gasoline engine and a 20 K. W. induction motor. A 60-cell, 300-ampere-hour storage battery supplies current for experiments in which absolutely steady power is desired.

There are direct current dynamos and motors of the constant current and constant potential types, transformers, converters, synchronous and induction motors, with a liberal supply of measuring instruments for use with the various machines. Single, two and three-phase alternators supply current at various voltages and frequencies.

The senior laboratory is situated on the first floor of Engineering Hall, and is supplied with direct current at 110, 220 and 500 volts, and alternating current, single phase, at 50, 110 or 220 volts and 60 cycles; two phase, 60 cycle at 110 or 220 volts; three phase, at 110 or 220 volts, with a frequency of 60 to 113 cycles a second. A high tension testing transformer supplies current at any voltage up to 120,000 volts for testing of insulators, while standard cells, a Kelvin balance and a potentiometer furnish means for calibrating the laboratory measuring instruments.

Students are also permitted to inspect the plant of the Fayetteville Electric Light & Power Company, take measurements and make tests on it. Its primary mains supply the electrical laboratory with alternating current at 60 cycles and 2,000 volts.

The photometric laboratory, which also serves as a photographic and X-ray dark-room, is supplied with a standard photometer bar, Lummer-Brohun screen and amyl acetate standard lamp.

Mechanical Engineer Laboratory. The laboratory contains the following machinery: One 35-horsepower compound automatic steam engine, one Hornby-Akroyd oil engine, one Kerr steam turbine, one slide valve steam engine, one 10-horsepower Weber gasoline engine, three small Cardinal gas engines made in the University shops, one 35-horsepower Westinghouse compound steam engine, $4\frac{1}{2} \times 3\frac{1}{2} \times 4$ duplex steam pump, one 50-horsepower Wheeler condenser with air, water, and circulating pumps, one Pulsometer steam pump, one Westinghouse air compressor, and one 60-pound Rheile testing machine, for testing materials in tension and compression, such as wood, steel, and cast iron. This machine is also equipped for testing large beams of steel, concrete or timber.

The laboratory is well provided with apparatus for experimental work, including a Mahler bomb calorimeter for testing fuels, an Orsat apparatus for flue gas analysis, a Junker calorimeter, an Olsen oil testing machine, a viscosimeter, a flash point tester, steam calorimeters, engine indicators, injectors, thermometers, pressure gauges, measuring tanks, feed water heater, water meters, scales, etc.

The steam boilers used for heating the University buildings are arranged so as to be available for experimental work, and the Corliss shop engine is also used for purposes of instruction.

By special arrangement with the Fayetteville Water Company, students are allowed to run tests in this plant.

Engineering Hall, erected in 1904, lies a short distance to the south of University Hall. The first story is built of native sand stone and the upper two stories are of brick trimmed with limestone.

The building is 150 by 58 feet, and contains the offices, recitation rooms, drawing rooms and testing laboratories of the civil, electrical and mechanical engineering departments.

Mechanical Hall is built of brick, is 40 feet wide and 155 feet in length, with an ell 35 by 40 feet, and contains the machine shop, wood shop, foundry and forge shop. The shops will accommodate about 75 students at one time. Adjoining on the east is a boiler room 54 by 88 feet.

The machine shop contains a Corliss engine, which runs the machinery in the whole building, a large iron planer, a shaper, several lathes of different sizes and makes, a drill press, grinding machines, a milling machine, and a good supply of hand tools, benches and materials. *The foundry* contains one Colleau cupola with a capacity of one and one-half tons of iron an hour, one brass furnace of one hundred and fifty pounds capacity; Buffalo pressure blower and core oven. *The wood shop* contains one buzz planer, one large cylinder planer, a circular saw, a band saw, five smaller lathes, one 18-inch pattern maker's lathe, one double column shaper and twenty-six benches, each equipped with a complete set of carpenter's tools. *The forge shop* contains eight Buffalo forges with down draft, which takes the smoke away through an underground pipe, thus avoiding the smoke and dirt of the ordinary blacksmith shop. It also contains a shearing and punching machine, eight anvils of different weights, and all the necessary blacksmith tools for the eight forges. *The boiler room* contains three fire-tube boilers, and three water-tube boilers, besides feed pumps, injectors, measuring tanks, etc.

DESCRIPTION OF COURSES OFFERED IN THE COLLEGE OF ENGINEERING

Courses designated by a numeral followed by the letter *a* are given during the first semester.

Courses designated by a numeral followed by the letter *b* are given during the second semester.

Courses designated by a numeral not followed by the letter *a* or *b* are continued through both semesters. Credit for one semester's work in such courses will not be granted.

The number in parenthesis after the name of a course indicates the number of hours of credit given for completion of the course.

CIVIL ENGINEERING

PROFESSOR KNOCH, ASSOCIATE PROFESSOR KNOTT, MR. BUCKLEY.

The course in engineering leading to the B. C. E. degree, is outlined on page 112.

The courses in civil engineering include theoretical instruction accompanied by illustrations and as much of engineering practice as possible. The courses will give the student a knowledge of fundamental principles that will enable him to enter intelligently upon professional practice.

The special technical studies which are offered may be grouped under the heads of surveying, applied mechanics, road and railroad engineering, hydraulic engineering, bridge engineering, and sanitary engineering.

The work in surveying extends over three years. It embraces land surveying, leveling and United States public land surveys, during the sophomore year; topography, railroad reconnoissance and location, during the junior year; triangulation and geodesy, during the senior year. Much time is devoted to practice in the field and drafting room, this work being carried on parallel with the class-room work. Each year a party of engineering students goes into camp one week for practice in surveying and locating railway lines.

HIGHWAY ENGINEERING

In recent years many problems have arisen in connection with the construction and maintenance of highways, creating a demand for men who have been trained for this particular branch of engineering. The course in highway engineering has been arranged to aid in training engineers for this line of work.

The work for the first two years of this course is practically identical with that of civil engineering. In the last two years subjects especially related to highway engineering have been introduced, and other subjects which are considered of less importance in highway work have been dropped from the regular course in civil engineering.

A well equipped laboratory has been provided for making all the standard tests in accordance with the practice of the United States Office of Public Roads.

All students are required to spend the vacation between their junior and senior years with the State Highway Engineer. Actual expenses will be allowed for this work.

2. DRAWING AND LETTERING (2)—Selection and care of instruments, conventional representation of materials; drawing and tracing plans, profiles, and maps; free-hand lettering; pen and colored topography. Two afternoons a week.

ASSOCIATE PROFESSOR KNOTT.
MR. BUCKLEY.

3. DESCRIPTIVE GEOMETRY (2)—Recitation and practice. Text-book: Church's *Descriptive Geometry*. Th. 1, M. 5-7.

PROFESSOR KNOCH.
MR. BUCKLEY.

4b. ARCHITECTURAL DRAWING (1)—Elementary course in architecture; drawing plans and elevations of simple structures; analysis of plans. Tu. W. 5-7.

MR. BUCKLEY.

5a. HIGHWAYS (1)—The location, construction, and maintenance of common macadam and Telford roads; brick, stone, wood, asphalt and bituminous pavements for city streets. Text-book: Baker's *Roads and Pavements*. Engineering Hall. T. Th. 2.

MR. BUCKLEY.

6. SURVEYING (with Civil Engineering 7) (3)—First and part of second semester. Care, use, and adjustment of instruments; use of chain, tape, compass, transit, solar attachment, level, sextant, plane-table; land surveying, contouring, laws and instructions relating to the surveys of the public domain. M. W. 1.

ASSOCIATE PROFESSOR KNOTT.

MR. BUCKLEY.

7. FIELD PRACTICE (1)—Exercises in land, topographical, and city surveying. One afternoon a week. Th. 5-8.

MR. BUCKLEY.

8b. SURVEYING (1½)—Care, use, and adjustments of instruments; platting field notes. Running grade lines and simple curves for electric railways. Recitation one hour and field practice two hours a week. *Elective for E. E. students. Prerequisite:* Plane Trigonometry.

ASSOCIATE PROFESSOR KNOTT,

MR. BUCKLEY.

9b. SURVEYING (½)—Leveling, land surveying, and land drainage. Required of students in the B. S. A. course. Tu. F. 3, W. 5-8.

MR. BUCKLEY.

10. RAILROAD ENGINEERING (2)—Preliminary surveys and location; transition curves, yards and turnouts; estimate of earthwork and materials used in construction; the economics of railroad location and management. Text-books: First semester, Searles' *Field Engineering* and Crandall's *Transition Curve and Earthwork Computations*; second semester, Raymond's *Railroad Engineering*, Part II. T. Th. 3.

PROFESSOR KNOCH.

11. FIELD PRACTICE (2)—Location of curves, turnouts, and Y's; measurements of embankments and cuts, and computation of volumes. One afternoon a week throughout the year. F. 5-8.

PROFESSOR KNOCH.

12. RAILROAD SURVEY.—One week, twelve hours a day. Actual field practice in reconnoissance, preliminary survey, location, and topographical survey.

13. DRAWING (2)—Lectures and practice. Shades, shadows, and perspective. Topographical and railroad maps from actual surveys; masonry dams, structural details, and working drawings for designs. M. Tu. 5-7.

ASSOCIATE PROFESSOR KNOTT.

14. STRUCTURAL MECHANICS (5)—A course especially designed for students in civil engineering. The theory of stresses and strains, with practical applications to the design of structures. Text-book: Church's *Mechanics of Engineering*. M. F. 2.

ASSOCIATE PROFESSOR KNOTT.

15a. MASONRY CONSTRUCTION (1)—Use of lime and hydraulic cement mortars; stone and brick masonry; concrete; foundations on land and under water; coffer-dams, cribs and caissons. Text-book: Baker's *Masonry Construction*. M. W. 4.

ASSOCIATE PROFESSOR KNOTT.

16. ROOFS AND BRIDGES (3 and 4)—Theory of computation of stresses by both analytical and graphical methods; full computations, designs, and bills of materials for roof truss and railroad bridge. Text-books: Merriman and Jacoby's *Roofs and Bridges*, Parts I, II, and III. M. Tu. W. F. 1.

PROFESSOR KNOCH.

17. TECHNICAL DRAWING (2)—Lectures and practice four hours a week throughout the year. Right and oblique arches; drawings for computations of course 16. Tu. W. 5-7.

PROFESSOR KNOCH.

18a. SANITARY ENGINEERING (1)—Calculation and special details of construction of sewers; separate and combined systems of sewers; purification of sewage; municipal and domestic sanitation. Text-book: Folwell's *The Designing, Construction, and Maintenance of Sewerage Systems*. M. 3, Th. 1.

PROFESSOR KNOCH.

18b. WATERWORKS ENGINEERING (1½)—A study of systems of water supply; collection, purification and distribution of water; location of waterworks, with details of construction and cost estimate; turbines and pumping engines. Text-book: Folwell's *The Designing, Construction, and Maintenance of Water-Supply Systems*. M. W. F. 1.

PROFESSOR KNOCH.

19a. ENGINEERING LABORATORY (1)—Tests of strength and other properties of materials of construction, tensile and crushing tests of brick, stone and cement; flow of water through pipes, elbows, valves, and measurement of water by means of weirs and meters. F. 5-8.

MR. BUCKLEY.

20a. REINFORCED CONCRETE (1)—Recitations, lectures, and

practical problems on the theory and design of various structures in reinforced concrete. Th. 5-8.

ASSOCIATE PROFESSOR KNOTT.

20b. FIELD PRACTICE (1)—Topographical survey, triangulation, precise leveling, and practical astronomy. Th. 5-8.

ASSOCIATE PROFESSOR KNOTT.

21. CONTRACTS AND SPECIFICATIONS (3)—Elective for seniors in engineering. Lectures and recitations. Text-books: Johnsons *Contracts and Specifications*; Waite's *Architectural and Engineering Jurisprudence*.

PROFESSOR KNOCH.

22b. HIGHWAY ENGINEERING (2)—Lectures and reports; road laws, economics and design of roads and pavements; tax, bond issues, and assessments; drainage; foundations; comparison of the different types of roads; road surveying and design. *Prerequisite*: Civil Engineering 5, 6, 7, 10a, 11a.

23b. HIGHWAY BRIDGES AND CULVERTS (2)—Lectures and problems in the design of highway bridges; determination of waterways; construction and maintenance of highway bridges and culverts. *Prerequisite*: Civil Engineering 13, 14, 16.

24b. HIGHWAY ENGINEERING LABORATORY (1)—Tests of gravel and broken stone to determine hardness, toughness, cementing power, and resistance to abrasion; rattler tests and absorption tests for paving brick; tests of sand and clay; inspection and tests of bituminous materials. One afternoon a week.

ELECTRICAL ENGINEERING

PROFESSOR GLADSON, ADJUNCT PROFESSOR STELZNER,

MR. BLAKESLEE

The course in engineering leading to the B. E. E. degree is outlined on page 113.

In the courses in electrical engineering general and technical subjects are combined in such proportions as to furnish a good foundation for the profession of electrical engineering. Sufficient theory is taught in the class-room and illustrated by laboratory experiments to give the student a knowledge of the underlying principles. Shop experience with manufacturing companies, to give the student specific practical training is desirable.

Such training should be obtained during vacations and after graduation.

1. ELECTRICAL ENGINEERING (3)—Recitations and demonstrations. A general elementary course in dynamos, electrical machinery, motors, transformers, primary and storage batteries, electric signals, mine haulage, and illumination. This course may be elected for one-half year. Required of mining, chemical and mechanical engineering students. Elective in other courses. *Prerequisite:* Physics 1. Text-book: Gray's *Principles and Practice of Electrical Engineering*. M. W. F. 3.

ADJUNCT PROFESSOR STELZNER.

2. DRAWING (2)—Recitations and practice four hours a week. Accurate mechanical drawings from electrical machinery; wiring plans from architectural drawings, perspective, line shading, orthographic projections. Th. F. 5, 6, 7. MR. BLAKESLEE.

3. ELECTRICAL ENGINEERING DESIGN (2)—Recitations and practice four hours a week. Working drawings of electrical machinery; design of direct current machinery; specifications and estimates. M. 5-7, W. 5. MR. BLAKESLEE.

4. ELECTRICAL ENGINEERING DESIGN (2)—Recitations and drawing, four hours a week. Design of alternating current machinery; motors, transformers and generators. *Prerequisite:* Electrical Engineering 3. Th. 5-7, W. 6. MR. BLAKESLEE.

4b. PHOTOMETRY OF ELECTRIC LAMPS (1)—Lectures and recitations on modern photometers and photometric methods. *Prerequisite:* Physics 1 and 2, Electrical Engineering 3, 5, and 7. M. Tu. 5, 6, 7. PROFESSOR GLADSON.

5. ELECTRICAL LABORATORY (2)—One afternoon a week. An extended course in magnetic and electrical measurements; current strength, electro-motive force and resistance; use and calibration of instruments; explorations of magnetic fields; testing of direct current dynamos and motors; primary and storage batteries. W. 5-8. ADJUNCT PROFESSOR STELZNER.

6. ELECTRICAL LABORATORY (2)—One afternoon a week throughout the year. A full experimental course in operating and testing direct and alternating current machines; transmission, storing and transformation of electrical energy. M. 5-8.

ADJUNCT PROFESSOR STELZNER.

7. DYNAMO-ELECTRIC MACHINERY (3)—Recitations confined chiefly to direct current apparatus, including types of motors, generators, and transformers; designs, calculations, construction, testing, and operating. Text-book: *Dynamo-Electric Machinery*, by Sheldon and Hausmann. M. W. F. 2. *Prerequisite*: Physics I and 2.

PROFESSOR GLADSON.

8a. THEORY OF ALTERNATING CURRENTS ($1\frac{1}{2}$)—Recitations and lectures on alternating current generators, motors, converters, measurements, theory of design, and calculations. Text-book: *Alternating Current Machines*, by Sheldon, Mason, and Hausmann. M. W. F. 1.

PROFESSOR GLADSON.

9b. POLYPHASE ELECTRIC CURRENTS ($1\frac{1}{2}$)—Recitations and lectures three hours a week. Text-book: *Alternating Current Machines*, by Sheldon, Mason, and Hausmann. Reference books: McClester's *Alternating Current Motors*, Steinmetz's *Alternating Current Phenomena*, W. Cramp and C. F. Smith's *Vectors and Vector Diagrams*; technical journals. M. W. F. 1.

PROFESSOR GLADSON.

10b. ELECTRIC RAILWAYS (1)—A course of recitations and lectures on the construction, equipment, and operation of different types of electric roads. Text-book: C. F. Harding's *Electric Railway Engineering*. Tu. Th. 2.

ADJUNCT PROFESSOR STELZNER.

11. TELEPHONY, TELEGRAPHY, RAILWAY SIGNALS, FIRE ALARMS, AND RELATED APPARATUS (2)—Recitations. Text-books: McMeen and Miller's *Telephony and Telegraph Systems*; International Correspondence Schools pamphlets; Scott's *Automatic Block Signals*; publications of the General Railway Signal Company and of the Union Switch & Signal Company. *Prerequisite*: Physics I. Tu. Th. 4.

MR. BLAKESLEE.

12a. TELEPHONE LABORATORY ($\frac{1}{2}$)—Work with telephone, telegraph, wireless telegraphy and telephony, railway signals, and allied apparatus. F. 3-4.

MR. BLAKESLEE.

13a. POWER STATIONS (1)—Lectures and recitations. Selection of machinery for power stations; steam, hydraulic, gas and electric, station construction, operation and management. Tu. Th. 3.

PROFESSOR GLADSON.

14b. ELECTRIC TRANSMISSION AND DISTRIBUTION (1)—Recitations and lectures. A study of the different methods of electrical

power distribution for light, railway or stationary power; long distance transmission. M. Tu. 3. PROFESSOR GLADSON.

15a. ALTERNATING CURRENT MOTORS (1)—Lectures and recitations. *Prerequisite*: Electrical Engineering 7 and 8a. Tu. Th. 1.

PROFESSOR GLADSON.

16b. HYDRO-ELECTRIC DEVELOPMENTS (1)—Lectures and recitations. A study of the methods of investigating power possibilities of flowing water, collecting data, selecting power sites, power house, transmission lines and machinery. *Prerequisite*: Electrical Engineering 7 and 8a. Tu. Th. 1.

PROFESSOR GLADSON.

17. ELECTRICAL ENGINEERING SEMINAR (1)—Students who attend and take part in 75 per cent. of the meetings of the University Branch of the *American Institute of Electrical Engineers* during their junior and senior years, and prepare and present an acceptable original paper on some engineering subject will be given one hour's credit.

18. HISTORY OF ENGINEERING (2)—The early development of engineering, as traced from historical records and from the remains of ancient works; development of engineering in later periods and its growth into a separate profession; the effects on civilization, general history and economic problems of the several inventions and other improvements which have marked the development of engineering; study of lives of some famous engineers; also the development of the general technical principles of engineering.

ADJUNCT PROFESSOR STELZNER.

19. ELEMENTARY ELECTRICAL LABORATORY (2)—One afternoon a week. This course is intended to illustrate the application of electrical machinery for power purposes and includes simple testing, operating and care of direct and alternating current machinery. Required of mining, chemical and mechanical engineering students. Th. 5-8.

ADJUNCT PROFESSOR STELZNER.

20. ILLUMINATING ENGINEERING (2)—Recitations and lectures on the different methods of artificial illuminating courses; intensity and distribution of light; physiological and hygienic problems; direct and indirect lighting; reflecting surfaces; illumination and photometric calculations. Text-books: Knox's *Electric*

Light Wiring, Wickenden's Illumination and Photometry. Tu.
Th. 2. MR. BLAKESLEE.

21. ELEMENTS OF ELECTRICAL ENGINEERING (5)—A general introductory course to the study of electrical engineering. Recitations and demonstrations, 5 hours a week, on elementary electricity and magnetism. This course is intended for students in the first year of the two-year course in electrical engineering. Text-book: Timbie's *Elements of Electricity*. W. F. I.

ADJUNCT PROFESSOR STELZNER.

INSPECTION TRIP.—Once each year visits of inspection are made by the senior class to power houses and large electrical installations; or a week is spent in actual practice work in determining hydro-electric possibilities of some stream.

MECHANICAL ENGINEERING

PROFESSOR WILSON, ASSOCIATE PROFESSOR MITCHELL, MR. DEAN,
MR. DUCKWORTH, MR. BETHEL, MR. CRIPPIN

The course in engineering leading to the B. M. E. degree is outlined on page 114.

Mechanical engineers are in demand in various lines of engineering work, such as consulting engineering; power plant design, construction and operation; designing, constructing, erecting, operating and testing all kinds of machinery; manufacturing; engineering salesmanship; heating and ventilation engineering; efficiency engineering, etc.

The course in mechanical engineering is designed to give the student a broad foundation in the subjects that are of the greatest importance to all branches of engineering, a technical education in his chosen field made practical by shop and laboratory courses, and, in electives, a certain amount of specialization and cultural development. It is believed that such a course will enable the student to be of immediate value to his employer and that it will insure certain advancement in his profession.

1b. SHOP WORK, CARPENTRY—A course in carpentry and joinery laid out to meet the requirements of students in agriculture. W. 2-4. MR. DUCKWORTH.

2. **FOUNDING**—Green sand moulding; melting and pouring brass and iron; core making. M. W. F. 1-8; Tu. 1-7, Th. 5-8, S. 3-4.
MR. DUCKWORTH.

3. **PATTERN MAKING**—Practice in making patterns. Care and use of wood working machinery. M. W. F. 1-8, Tu. 1-7, Th. 5-8, S. 3, 4.
MR. DUCKWORTH.

4. **FORGING**—Management of fires; drawing and welding; riveting and tempering; case-hardening and annealing. M. W. F. 1-8, Tu. 1-7, Th. 5-8, S. 1-4.
MR. DEAN.

5. **MACHINE SHOP PRACTICE**—Exercises in chipping and filing; practical work in turning, planing, drilling; grinding; use of milling machine, erection of machinery. M. W. F. 1-8, Tu. 1-7, Th. 5-8, S. 1-4.
MR. DEAN.

6. **MANUAL TRAINING (1-2)**—A beginner's course suitable for persons intending to teach manual training in the primary grades. This course is made up of work in paper cutting, folding and pasting, book-binding, and sloyd. M. Tu. S. 1, 2, 3.
MR. DUCKWORTH.

7. **MANUAL TRAINING (1-2)**—A continuation of Mechanical Engineering 6 with exercises in wood carving, turning, and elementary cabinet making. M. Tu. S. 1, 2, 3.
MR. DUCKWORTH.

8. **ADVANCED WORK** in any of the above courses.

MR. DUCKWORTH.

MR. DEAN.

Material fees are charged for the preceding courses as follows: Mechanical Engineering 2 and 3, \$2.00; 4 and 5, \$2.00; 1b, 6, 7, 8, \$2.00 each.

9. **AUTOMOBILE REPAIR LECTURES AND DEMONSTRATIONS (1)**—A course of practical talks and demonstrations dealing with materials used in the manufacture of automobiles, and the several processes used in their repair. Some of the subjects treated are tire materials, aluminum alloys, steel alloys, soldering, brazing, case hardening, annealing, tempering, acetylene welding, vulcanizing, etc.

PROFESSOR WILSON.

ASSOCIATE PROFESSOR MITCHELL.

MR. DEAN.

10. **ENGINEERING DRAWING (1-2)**—Free-hand lettering, practice in the use of instruments, principles of orthographic projec-

tion, technical sketching of machine parts, working drawings from sketches, tracing, and blue prints.

Short course students, M. 6-8; Agricultural students, Tu. 5-7; Engineering students, W. Th. F. 5-8.

ASSOCIATE PROFESSOR MITCHELL.

MR. BETHEL.

11. LETTERING (1-2)—Titles for maps and drawings, pen and colored topography. M. F. 2-4. Required of Civil Engineering freshmen; elective for other students.

12a. MECHANICAL DRAWING (1)—Perspective and isometric drawing; intersections; developments; detail drawing; blue printing. Tu. F. 5-7.

13. ARCHITECTURAL DRAWING (2)—Architectural lettering, conventions used in architectural drawing, standard details of buildings, the orders of architecture, complete plans of buildings from sketches. W. Th. F. 5-8.

MR. BETHEL.

14. MACHINE DESIGN (3)—Kinematics of machinery; design of gear teeth; link motions, cams, etc. One hour's recitation and six hours' drawing a week. Tu. F. 5-7. Text-book, Schwamb and Merrill's *Elements of Mechanism*.

ASSOCIATE PROFESSOR MITCHELL.

15b. MACHINE DESIGN (2)—A study of empirical methods of design, and the application of the principles of mechanics to the design of machine elements. W. F. 1, Tu. F. 5-7. Text-book: Kimball and Barr's *Machine Design*.

ASSOCIATE PROFESSOR MITCHELL.

16. OPERATION OF POWER PLANT EQUIPMENT (2)—The actual operation of steam, gas and oil engines, boilers, pumps, condensers, and the repairing of same. Six hours' work a week are required in this course for two hours' credit. M. Tu. 5-7; S. 1-3.

MR. CRIPPIN.

17. EXPERIMENTAL ENGINEERING (2)—Calibration of engineering instruments; indicators, steam gauges, planimeters, nozzles, meters, weirs, etc., valve setting, steam engine, gas engine and boiler tests. Text-book: Moyer's *Power Plant Testing*. Four hours' laboratory work a week. M. or W. 5-8.

ASSOCIATE PROFESSOR MITCHELL.

18. EXPERIMENTAL ENGINEERING (2)—Use of Mahler bomb calorimeter in determining heat value of coal and oil; flue gas

analysis; comparative tests of different types of steam engines, boilers, pumps, gas engines, oil engines, turbines; special investigations. F. 5-8.
PROFESSOR WILSON.

19. EXPERIMENTAL ENGINEERING (2)—An advanced course in laboratory investigation for students desiring to take up a definite line of experiments related to some line of study in this department. The experiments and tests will be arranged to suit the needs of small sections.
PROFESSOR WILSON.

20a. STEAM ENGINES AND BOILERS (1½)—Elementary theory of steam and gas engines, boilers, their care and management; valve gears. Text-book: J. H. Kinealy's *Steam Engines and Boilers*. M. W. F. 5. For short course and B. S. A. students.
PROFESSOR WILSON.

20b. ELEMENTARY GAS ENGINES AND PRODUCERS (1½)—Elementary principles of different types of gas engines and gas producers. Text-book: Hisco-Page's *Gas, Gasoline and Oil Engines*. M. W. F. 5.
PROFESSOR WILSON.

21. MECHANICS (3)—An elementary course in mechanics and strength of materials. Text-book: Jameson's *Elementary Practical Mechanics*. M. W. F. 3. Required of Mechanical Engineering short course students; elective for other students.

ASSOCIATE PROFESSOR MITCHELL.

22a. THEORETICAL MECHANICS (2)—Statics and Dynamics. Mathematical discussions of force, inertia, energy, etc. Text-book: Slocum's *Theory and Practice of Mechanics*. M. Tu. W. Th. 2. *Prerequisite*: Mathematics 4a, 4b and 7.

ASSOCIATE PROFESSOR MITCHELL.

22b. MECHANICS OF MATERIALS (2)—The materials of construction, timber, stone, iron, steel, cement, brick, etc., are studied. The formulæ for the figuring of strength of beams, columns, shafting, etc., are developed. Numerous applications of the formulæ to practical problems are made. Text-book: Merriman's *Mechanics and Materials*. M. Tu. W. Th. 2. *Prerequisite*: Mathematics 4a, 4b and 7.

ASSOCIATE PROFESSOR MITCHELL.

24a. STEAM ENGINES AND BOILERS (1½)—Elementary thermodynamics; theoretical heat engines; valve gears; comparison of types of steam engines; boilers, and feed water pumps; use

of feed water heaters, condensers, etc. Text-book: Allen and Bursley's *Heat Engines*. M. W. F. 4. PROFESSOR WILSON.

24b. GAS ENGINES AND PRODUCERS (1½)—Development and theory of different types of gas and oil engines; suction and pressure producers; cost of gas and steam power compared. Text-book: Carpenter and Deadrich's *Internal Combustion Engines*. M. W. F. 4. PROFESSOR WILSON.

26. MACHINE DESIGN (4)—Theory of steam and gas engines; problems in steam and gas engines and boiler design. Two recitations, six periods of drawing. *Prerequisite*: Mechanical Engineering 14. M. W. 3, Tu. F. 5-7. PROFESSOR MITCHELL.

27b. HYDRAULICS (1)—Hydraulics and Hydrostatics. Text-book: Merriman's *Treatise on Hydraulics*. Tu. Th. 4. PROFESSOR WILSON.

28a. HYDRAULIC MACHINERY (1)—A study of the design, construction, and operation of turbines and pumping machinery. Text-book: E. Butler's *Modern Pumping and Hydraulic Machinery*. Tu. Th. 4. PROFESSOR WILSON.

29. METHODS OF ICE-MAKING, COLD STORAGE (2)—Theory of the absorption and compression systems of ice-making; ice-making machinery; cost of making; buildings, insulation of storage rooms. PROFESSOR WILSON.

30. HEATING AND VENTILATION (3)—The theory of heating and ventilation. The different systems of heating by furnaces, steam, and hot water, are studied from the text (working drawings being made by the students of each system of heating), and the merits of each are fully treated. Contracts, specifications, bills of material and cost of the different plants, are prepared. Two recitations and three hours drawing a week.

PROFESSOR WILSON.

31. POWER PLANTS (3)—Mechanical engineering of power plants; selection of machinery for equipment of power stations; plans and specifications. Two recitations and three hours' drawing a week, either one or two semesters. *Prerequisite*: Mechanical Engineering 24a.

33b. COMMERCIAL ENGINEERING (1½)—The factors controlling costs, efficiency systems, depreciation of machinery and equipment, inventories and valuations, cost keeping, time systems.

PROFESSOR WILSON.

34. **ENGINEERING SOCIETY.**—The student branch of the *American Society of Mechanical Engineers* holds regular meetings. One credit will be given juniors and seniors for regular attendance and the presentation of at least two papers a year, on some engineering subject.

One half-credit will be allowed freshmen and sophomores for regular attendance, and the reading of assigned papers.

MINING ENGINEERING

PROFESSOR DRAKE.

The four years' course in engineering leading to the degree of B. Mi. E. is outlined on page 115. The course is planned so as to give the major instruction in geology and mining with minor work in chemistry, civil engineering, mechanical engineering and electrical engineering, and at least a working knowledge of some one modern language besides English.

The practical work of mining, metallurgy, and ore dressing can be learned so much more readily at practical work than no laboratory work in these lines is offered at the University. Students are expected, however, to spend parts of at least two summer vacations at ordinary day work in some mine, mill, or smelter where they will be expected to ask questions of the workmen, keep notes of their observations, and compute the costs of some detailed operations.

While the course is not unduly exacting, it is severe and should be undertaken only by students well prepared mentally and physically. To accomplish all the work well, the average student will have to devote seven or eight hours a day six days a week, to his college work during the academic year.

MINING.

1b. **DETAILS OF MINING OPERATIONS (1½)**—Lectures and recitations three hours a week during the second term on excavation of earth, drilling and blasting; driving shafts, adits, and drifts; stoping, timbering, hoisting, drainage, and transportation.

2a. **ORE DRESSING (1½)**—General principles and theory of ore dressing, cleansing, crushing, sizing, and classifying, jigging,

table concentration, stamp milling of gold and silver ores, and descriptions of typical ore dressing works. Text-book: Richard's *Ore Dressing*.

METALLURGY

1b. GENERAL METALLURGY (I)—Elementary study of fuels and furnaces and the metallurgy of iron and steel, copper, lead, silver, and gold. Lectures and recitations.

2b. ASSAYING ($\frac{1}{2}$)—Fire assaying of various classes of ores and furnace products of gold, silver, and lead. Laboratory work four hours a week on Saturdays with occasional lectures and recitations. Text-book: Fulton's *Manual of Fire Assaying*.

The courses in mining and metallurgy will be extended when there is an increased demand for such courses and when additional teaching force is added to the department.

OTHER SUBJECTS

For descriptions of the courses in English, Modern Languages, Mathematics, Physics, Chemistry, Geology, Economics, see the announcements of the College of Arts and Sciences.

THE COLLEGE OF AGRICULTURE

The College of Agriculture is designed to train men and women for efficiency in Agriculture. The courses are outlined to offer training for the profession of farming, for teaching agriculture, or for specialization in particular lines in preparation for work in State Experiment Stations or the United States Department of Agriculture.

ADMISSION

The admission requirements for the college are given in the general statement of the entrance requirements of the University, pages 22, 23.

THE LONG COURSE IN AGRICULTURE

REQUIREMENTS FOR GRADUATION

The collegiate course of four years leads to the degree of Bachelor of Science in Agriculture. Sixty-seven hours, including military training, are required for graduation. The work of the first two years is prescribed. This is also true in parts of the work of the junior and senior years.

Not later than the beginning of the junior year the student is required to choose his major study, which largely determines the remainder of his work. The outline of the curriculum, pages 139, 140, indicates the range of work permitted.

The student must present a minimum of ten hours' credit in the major subject and six hours in a minor subject which must be allied to his major.

The major and minor subjects must be taken in the departments of the College of Agriculture. Students preparing to teach agriculture will be allowed to take their major or their minor in the School of Education.

Students preparing for professional and graduate work must present six hours' credit in one modern language.

A thesis is required of all candidates for a degree.

Students who expect to teach agriculture in high schools or in any part of the public school system of the state should, owing

to certificate requirements, take the necessary courses in Education. See fourth group, page 56.

UNCLASSIFIED WORK

Permission to elect special practical work by students who can attend college for one or two years only, will be granted, at the discretion of the Dean, to students who can supply satisfactory evidence that they have had two or more years of practical farm experience. This privilege will not be granted a second time to a student who has not passed satisfactorily all of the work for which he has enrolled in the University.

SPECIAL STUDENTS

Persons over 18 years of age may upon approval of the Dean be admitted as special students. This provision does not include free election of courses and does not apply to students having entrance credits. Special students are subject to the same regulations as students who satisfy regular entrance requirements. They may become candidates for graduation by providing entrance credits.

THE SHORT COURSE IN AGRICULTURE

Students, sixteen years of age or over, with common school training, may enter the short course in agriculture. This course is designed for those who cannot remain away from home the whole year and who desire training in preparation for practical farming. For description see page 156.

The course begins November 16 and continues for three months. Courses for students taking second year's work will be offered in November, 1915. Similar standards will be required in these courses as in others.

Correspondence courses offered by the College are described in detail on page 155.

THE COURSE OF STUDY FOR THE COLLEGE OF AGRICULTURE

The following courses are required of all candidates for the Degree of Bachelor of Science in Agriculture:

FRESHMAN YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Agronomy 1a	3	Agronomy 1b	3
Animal Husbandry 1a	3	Horticulture 1b	3
Biology 2	3	Biology 2	3
Chemistry 1	3	Chemistry 1	3
English 1	3	English 1	3
Mechanical Engineering 1a	1	Mechanical Engineering 1b	1
Military Science	1	Military Science	1
	<hr/> 17		<hr/> 17

SOPHOMORE YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Agronomy 2a	5	Animal Husbandry 1b	3
Chemistry 3	3	Chemistry 5b	3
Mathematics 10a	4	Civil Engineering 9b	1
Physics	2	Physics	3
Entomology 1	3	Bacteriology 1b	5
Military Science	1	Mechanical Engineering 10	2
	<hr/> 18	Military Science	1
			<hr/> 18

JUNIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Chemistry 6a	3	Agricultural Chemistry	3
English 13	3	English 13	3
Military Science	1	Military Science	1
	<hr/> 7		<hr/> 7

SENIOR YEAR

First Semester		Second Semester	
	Hours a Week		Hours a Week
Industrial History	3	Agricultural Economics	3

One of the following groups is to be selected at the beginning of the junior year.

Required of students who select Agronomy for a major

Plant Pathology 3a, Plant Diseases.....	1½ hrs.
Animal Husbandry 3b, Feeds and Feeding.....	1½ hrs.
Agronomy 4a and 4b.....	3 hrs.
To be selected under the direction of the major professor.....	13 hrs.
Electives	3 hrs.
Total for graduation.....	67 hrs.

Required of students who select Animal Husbandry for a major

Veterinary Science 1a and 1b.....	3 hrs.
Agronomy 5b and 5l, Soil Fertility.....	2½ hrs.
Animal Husbandry 3b, Feeds and Feeding.....	1½ hrs.
Animal Husbandry 4b, Livestock Breeding	1½ hrs.
To be selected under the direction of the major professor.....	10½ hrs.
Electives	3 hrs.
Total for graduation.....	67 hrs.

Required of students who select Horticulture for a major

Plant Pathology 3a, Plant Diseases.....	1½ hrs.
Agronomy 5b and 5l, Soil Fertility.....	2½ hrs.
Horticulture 6, Seminar.....	1 hr.
To be selected under the direction of the major professor.....	14 hrs.
Electives	3 hrs.
Total for graduation.....	67 hrs.

Required of students preparing to teach Agriculture

(Graduates from this course will also receive the L. I. Certificate)

Education. (Those courses required for the L. I. Certificate).....	12 hrs.
Major in some department of the College of Agriculture.....	8 hrs.
A minor in not more than two departments of the College of Agriculture.....	6 hrs.
(Geology 1 may be substituted for Industrial History and Agricultural Economics)	
Total for graduation.....	71 hrs.

Required of students looking to professional and graduate work

Modern Language	6 hrs.
Major Subject	6 hrs.
Minor Subject	4 hrs.
Agricultural Chemistry 2.....	2 hrs.
Thesis (in the major subject).....	1½ hrs.
Electives	2 hrs.
Total for graduation.....	64 hrs.

LABORATORIES AND EQUIPMENT

Agricultural Chemistry Laboratory. The laboratory of agricultural chemistry is situated in three rooms in the Experiment Station Building. It is equipped with water, gas, tables, hoods, and all apparatus necessary for analytical work relative to various agricultural problems.

Cotton Laboratory. The cotton laboratory is situated in the Agricultural building. It is equipped for technical study of cotton and cotton fiber in addition to the more practical study. A new improved gin, a common gin, a fibre-strength testing machine, a lantern for the study of length and character of fiber, a microscope, and hundreds of samples of cotton, representing all types and grades are available for instruction and research.

Entomological Laboratory. The entomological laboratory is situated on the first floor of Agricultural Hall, occupying two rooms. It is well supplied with apparatus, such as microscopes, microtomes, paraffine baths, dissecting instruments, collecting nets, insect cabinets, and work-tables. The collection of insects is growing rapidly and serves as a valuable aid to the student of entomology.

Field Crops Laboratory. The laboratory of field crops is situated on the second floor of the Agricultural Building. A complete set of material is used in the study of types, strains and quality, and the scoring and judging of staple and miscellaneous crops.

Horticultural Laboratory. For such work as must be carried on indoors there is available for study and practice a fairly complete equipment of spraying machinery, garden tools, implements and conveniences. There are rooms equipped for practical instruction in grafting, seed sowing, seed testing, and transplanting. The greenhouse offers facilities for some phases of class work, plant study and practice. By using the orchard, garden, greenhouse, and campus as a laboratory, the student has opportunity to combine theory and technique in the most beneficial manner.

Plant Pathology Laboratory. The laboratory of plant pathology is situated in the Experiment Station Building. It is

equipped with high power microscopes and such apparatus as is needed for the study of plant tissues and plant diseases.

Soils Laboratory. The soils laboratory is situated on the first floor of the Agricultural Building. It is equipped with apparatus for special study of soils with a view of giving the student an insight into the formation, composition, and character of soils with reference to their bearing upon soil fertility, adaptability, and all methods of soil treatment affecting the productivity and conservation of soils.

Bacteriology Laboratory. The research laboratory of the department is situated in the Experiment Station Building, where a part of the instruction in bacteriology is given. A well equipped laboratory in the Dairy Building is used for the major part of the student work.

Dairy Laboratories. The Dairy Building is equipped with a full line of modern dairy machinery. A modern creamery is operated throughout the year. Student laboratories are equipped for the study of sanitary principles in dairying and with separators, churns, vats, and equipment for standard home dairying.

Animal Husbandry. Modern barns, including dairy barn, horse barn, hog barn, and poultry houses, are easily accessible for use in instruction. The livestock, horses, cattle, swine and poultry, form the basis for instruction in animal industry.

Home Economics Laboratories. Half a floor in Peabody Hall is occupied by the laboratories for cookery, sewing, millinery, and table service, and a reception room. The equipment in each laboratory is new and modern, chosen for its utility and convenience. It is sufficient to carry on successfully the work of the classes in the various branches of Home Economics.

DESCRIPTION OF COURSES OFFERED IN THE COLLEGE OF AGRICULTURE

Courses designated by a number followed by the letter *a* are given during the first semester.

Courses designated by a number followed by the letter *b* are given during the second semester.

Courses designated by a number not followed by the letter *a* or *b* are continued through both semesters.

Courses designated by a number followed by the letter *l* are laboratory courses.

The number in parenthesis after the name of a course indicates the number of hours of credit given for completion of the course.

It is provided that any course not prescribed for graduation may be withdrawn unless four or more students enroll for it.

BACTERIOLOGY AND PATHOLOGY

MR. McARTHUR

1b. GENERAL BACTERIOLOGY (2½)—A course designed to give an understanding of the morphology, physiology and classification of Bacteriology. Also a study of the relation of bacteria to disease and to various agricultural processes, with training in laboratory methods.

Three lectures and two laboratory periods a week. *Prerequisite*: Chemistry I.

2a. DAIRY BACTERIOLOGY (2)—A study of the bacterial content of milk, butter, cheese and various dairy products. Also the use of bacteria in commercial dairying. Two lectures and one laboratory period a week. *Prerequisite*: Bacteriology 1b.

3b. GENERAL HYGIENE (2)—A study of the general principles of hygiene and sanitation. One lecture a week.

HORTICULTURE

PROFESSOR WICKS, MR. TRUAX

Horticulture consists of four distinct lines of work, namely: Pomology, Vegetable Gardening, Floriculture, and Landscape Gardening.

Horticulture 1b is required of all students in the freshman year in the College of Agriculture. Students specializing in agricultural education are required to take three additional hours in horticulture. For course for students majoring in horticulture, see outline of the curriculum. It is advisable for the student majoring in this work to specialize in some particular branch of horticulture.

1b. PROPAGATION OF PLANTS AND PRINCIPLES OF PLANT CULTURE (1½)—This course deals with the methods used in greenhouse and nursery in the multiplication of plants. The student is expected to become familiar with the common practices and problems of the orchard and garden. Two lectures and one laboratory period a week. Required of freshmen.

MR. TRUAX.

2. PRACTICAL POMOLOGY (3)—A study of the general and fundamental principles of fruit growing. The student is expected to become skillful in planting, pruning, thinning, harvesting and packing. Practical problems in handling commercial orchards are included. Two lectures and one laboratory period a week. *Prerequisite:* Horticulture 1b.

MR. TRUAX.

3a. SMALL FRUIT CULTURE (1)—A study of the small fruits such as the strawberry, blackberry, raspberry, currant, gooseberry and dewberry. Each is studied with reference to history, classification, propagation, planting, pruning, enemies, harvesting and marketing. Lectures and recitations. *Prerequisite:* Horticulture 1b.

MR. TRUAX.

4a. SYSTEMATIC POMOLOGY (1)—The description, nomenclature, and classification of our common fruits are studied. Practice is given in fruit judging and displaying. Varieties of fruit from many different states are obtained for comparison. Mainly reference and laboratory work. *Prerequisite:* Horticulture 1b, 2 and 3a.

MR. TRUAX.

5b. VEGETABLE GARDENING (1)—This course consists of work in classification, culture, handling, and marketing vegetables considered from both a home and market garden standpoint. One lecture and one laboratory period a week. *Prerequisite:* Horticulture 1b.
MR. TRUAX.

6. SEMINAR (1)—One lecture a week on technical work for advanced students dealing with special problems. Required of students majoring in horticulture. *Prerequisite:* Horticulture 1b, 2, 3a, 4a and 5b.
PROFESSOR WICKS.

7a. COMMERCIAL POMOLOGY (1)—A course dealing with the problems of packing, marketing, transportation, storage, formation of fruit growers' association, and handling by-products. Lectures, laboratory work, recitations and reference reading. *Prerequisite:* Horticulture 1b, 2, 3a and 4a.
PROFESSOR WICKS.

8b. LANDSCAPE GARDENING (1)—A study of the elementary principles with reference to the selection and arrangement of trees and plants for beautifying private and public grounds. One lecture and one laboratory period a week. *Prerequisite:* Horticulture 1b.
MR. TRUAX.

9. THESIS (2)—Required of senior horticultural students. Special investigational work. *Prerequisite:* Horticulture 1b, 2, 3a, 4a and 5b.
PROFESSOR WICKS.

AGRONOMY

ASSISTANT PROFESSOR LASSETTER, ASSISTANT PROFESSOR HUNGERFORD, MR. OSBORN, MR. BAKER, MR. STRICKLAND.

Agronomy is the science of the field, the soil and its crops. The study of the soil is conducted from the standpoint of the fundamental principles of management of the soil for crop production and for affording opportunity for special study in particular fields of the subject. The study presupposes a fair understanding of the general principles of physics, chemistry, and plant physiology.

The study of crops is conducted from the standpoint of the fundamental biological and physiological principles underlying the growth, adaptation, and improvement of plants, and economic

and business management of the field and its crops. The study presupposes a general knowledge of botany.

1. AGRONOMY (3)—The course comprises a study of crops—corn and small grains, cotton and other fibre crops, grasses, clovers, forage and miscellaneous crops. It consists of a study of types, varieties, strains, quality, market standards, the use of score cards, grading, identification of seeds of grasses, clovers, alfalfa, and other legumes and forage crops, weed seed and characteristic adulterants, noxious and parasitic seeds. Stress is placed upon the staple crops. Lecture and laboratory work combined. M. W. F. 3, 4. *Required of Freshmen.*

MR. OSBORN.

2a. SOIL PHYSICS (1½)—This course comprises a study of the nature, origin, formation, and classification of soils; soil moisture and the methods of conserving it; movements of soil water; its relation to color, light, and temperature; objects and method of use of farm implements as related to the various soils and crops; cultivation and drainage as affecting soil moisture, temperature, aeration, root development, and the supply of available plant food. M. W. F. 1. *Required of sophomores.*

ASSISTANT PROFESSOR HUNGERFORD.

2l. SOIL PHYSICS (3)—Supplementary to course 2a. Designed to prepare the student better to understand the nature of soil, the methods of treatment of soil and the effect of these methods upon aeration, texture, temperature, moisture, water holding capacity, and crop production. The work comprises the determination of such constants as specific gravity, pore space, capillarity, organic matter, etc., of the various types of soils; mechanical analysis of soils; soil survey and soil mapping. M. F. 5, 6, 7. *Required of sophomores.*

ASSISTANT PROFESSOR HUNGERFORD.

4. FARM CROPS (5)—This course embraces a thorough study of staple and miscellaneous farm crops; methods of cultivation, seeding, harvesting, storing, and marketing; testing, selecting, and improvement; combating weeds. M. T. W. Th. F. 2. *Required of students majoring in agronomy.* MR. OSBORN.

5b. SOIL FERTILITY (1½)—A study of conditions governing productivity, exhaustion of soils, and maintenance of fertility; soil bacteria, organic matter, green manures, farm manures, and commercial fertilizers; effect of crops and fertilization; rotation

of crops and treatment of soil; soil building; a permanent agriculture. M. W. F. I. ASSISTANT PROFESSOR HUNGERFORD.

5l. SOIL FERTILITY (2)—A course in soil chemistry. Supplementary to 5b. T. Th. 5, 6, 7.

ASSISTANT PROFESSOR HUNGERFORD.

6b. FARM DRAINAGE (1½)—This course comprises the study of drainage and irrigation relative to the farm; the mapping, planning, and laying of drainage systems on rice farms; field work, including the care, adjustment, and use of instruments used in this work. Recitation and laboratory work three periods a week. *Prerequisite*: Agronomy 2a.

ASSISTANT PROFESSOR HUNGERFORD.

7. SPECIAL JUDGING (2)—Advanced judging of cotton, corn, rice, and grains. Lectures, laboratory exercises, and assigned reading. *For advanced students and graduates. Prerequisite*: Agronomy 1, 2a, 2l, 4.

MR. OSBORN.

MR. BAKER.

8a. GENETICS (1½)—The fundamental principles of variation and heredity. Designed to give a thorough knowledge of the basic principles involved in the systematic improvement of plants and animals. The course is preparatory to courses in practical plant and animal breeding.

MR. OSBORN.

8b. PLANT BREEDING (1½)—The practical application of the principles of variation and heredity to the breeding of general farm crops. Special attention is paid to the practical breeding of corn, cotton, grains, and forage crops. Lectures and assigned readings. *For advanced students and graduates. Prerequisite*: Agronomy 8a.

MR. OSBORN.

9a. FARM MANAGEMENT (1½)—Choosing and buying the farm. Systems of farming—intensive and extensive, specialized and general; arrangement, organization, and equipment for special systems; administration and cost of production; marketing farm products; records, accounts. *For advanced students and graduates.*

10. RESEARCH WORK—Individual effort combined with class work. One or both semesters. *For advanced students and graduates.*

THESIS—Special investigation of subjects in the field of agronomy. *Required of students majoring in agronomy.* Hours to be arranged.

PLANT PATHOLOGY

PROFESSOR HEWITT, MR. FIELDS.

Plant pathology 3a and 3b treat the subject of plant disease primarily from the standpoint of Agriculture. Plant Pathology 1a, 2b and 4a comprise a careful study of the subject of disease of plants from the standpoint first of Etiology and then of Pathology, and incidentally of disease control. General botany or agricultural botany, the equivalent of Biology 2 in the University is prerequisite to all courses in this department. No course in this department is open to underclassmen.

The work in morphology and histology is such as will lead to a thorough understanding of the economic aspects of the subject.

1a. MYCOLOGY (2)—Morphology of typical fungus forms and the classification of fungi, including a brief consideration of the allied groups of lower plants.

2b. PLANT PATHOLOGY (2)—Diseases of plants in relation to parasites and environment. The conditions inducing disease and the reaction of the diseased organism. Three hours a week are spent in the class room and the equivalent of one hour a week is spent in summer field work. *Prerequisite:* Plant Pathology 1a.

3a. DISEASES OF PLANTS ($1\frac{1}{2}$)—The more important fungous and bacterial diseases of crop plants, their characteristics and control. *Required of students majoring in horticulture and in agronomy.* *Prerequisite:* Biology 2.

3l. FUNGICIDES AND INSECTICIDES (2)—The more widely known spraying mixtures and disinfecting and fumigating materials and the methods of using them are discussed. This course is conducted in coöperation with the Department of Entomology.

3b. DISEASES OF TREES ($1\frac{1}{2}$)—The diseases of economically important forest trees, the cause of decay in timber. *Prerequisite:* Plant Pathology 1a or 3a.

4b. BACTERIA IN RELATION TO PLANT DISEASE ($1\frac{1}{2}$)—Cultural and morphological studies of bacteria causing plant disease. Infection experiments. *Prerequisite:* Plant Pathology 1a or 3a.

5. RESEARCH WORK (3 or more)—Work will be assigned to students with adequate preparation. Hours to be arranged.

VETERINARY SCIENCE

ASSISTANT PROFESSOR GOW.

1a. VETERINARY SCIENCE ($1\frac{1}{2}$)—This course comprises a general outline of veterinary anatomy and physiology, diseases of animals, their treatment, and simple surgery. Two lectures, one laboratory period on Saturday, clinics from 8 to 12 o'clock. *Required of students majoring in animal husbandry.*

1b. VETERINARY SCIENCE ($1\frac{1}{2}$)—This course consists of the anatomy and physiology of domestic animals; dentition and the determination of age by teeth; lameness—its cause, prevention and cure; ventilation and disinfection; contagious diseases and disease processes; methods of restraint and anæsthetics; surgery. *Required of students majoring in animal husbandry.*

AGRICULTURAL CHEMISTRY

PROFESSOR THOMPSON, MR. TUCKER.

Agricultural Chemistry deals mainly with the changes occurring in the soil, the growth and life of plants, the feeding of animals, and the preparation of food products. It is essentially the application of chemistry to agricultural problems.

In the following courses it is assumed that the student possesses an acquaintance with general chemistry and is familiar with the properties of the more commonly occurring elements and their compounds.

1b. AGRICULTURAL CHEMISTRY ($1\frac{1}{2}$)—Lectures, recitations, and written reports. The course is a detailed study of the application of chemistry to agricultural problems, accompanied by oral and written reviews of Experiment Station publications dealing with various phases of agricultural chemistry. *Prerequisite:* Chemistry 1, 3, and 5. *Required of juniors.*

PROFESSOR THOMPSON.

2. AGRICULTURAL CHEMISTRY—Laboratory work supplemented by lectures. Chemical analysis of feeds, fertilizers, insecticides, fungicides, dairy products, soils and foods. The amount of credit to be determined by the work done. Hours to be arranged. *Prerequisite:* Chemistry I, 3, 5, 6, and Agricultural Chemistry 1a. Elective. (*Omitted in 1914-15.*)

PROFESSOR THOMPSON.

MR. TUCKER.

ENTOMOLOGY

ASSISTANT PROFESSOR BECKER.

The courses in Entomology as outlined below, are designed to meet the needs of two classes of students; namely, students of Agriculture who desire to get an insight into the subject from an economic standpoint, and students who wish to take up the subject from a biological standpoint.

1a. GENERAL ENTOMOLOGY ($1\frac{1}{2}$)—Lectures and laboratory work in the morphology, habits and classification of insects. Two hours of lectures and three hours laboratory work a week.

2b. ECONOMIC ENTOMOLOGY ($1\frac{1}{2}$)—Two hours of lectures and one hour of laboratory work a week. In the lectures the various economically important insects and critical phases of their life histories, methods of control, insecticides, spray machinery, etc., are discussed. Compounding of insecticides, study of different types of spraying machinery and field and laboratory studies of economically important insects constitute the laboratory work. Students are advised to take Plant Pathology 3 in conjunction with this course. *Prerequisite:* Entomology I.

3a. MORPHOLOGY OF INSECTS ($1\frac{1}{2}$)—This course takes up in more detail the laboratory work in Entomology 1a and is designed for students who wish to do more advanced work in entomology. Must be preceded or accompanied by Entomology 1a. The student may take this course in lieu of the laboratory course in Entomology 1a. Hours by appointment.

4a or 4b. ELEMENTARY SYSTEMATIC ENTOMOLOGY ($1\frac{1}{2}$)—Laboratory study of wing venation of insects and of the grosser distinguishing characteristics used in classifying insects. *Prerequisite:* Entomology 1a or 2b. Hours by appointment.

ANIMAL HUSBANDRY

PROFESSOR DVORACHEK, MR. BRANSON, MR. QUIST.

This department offers courses in live stock production, dairy-ing and poultry. Training is given in all lines of work which pertain to the selection, breeding, feeding, development, care and management of the various classes and breeds of farm animals. The stock and poultry owned by the department are used to familiarize the student with the various types and breeds of live stock and their management. Students interested in dairy manufactures have the opportunity to study the machinery in operation in the creamery.

1a. LIVE STOCK JUDGING ($1\frac{1}{2}$)—Scoring and judging market classes of horses, cattle, sheep and swine. The work in this course is so arranged as first to impress upon the student's mind the comparative value of various points in animals by the use of the score card. This work is followed by practice work in comparative judging. Animals from the college herds, supplemented by livestock belonging to neighboring farmers and livestock men are used for class work. Four hours' laboratory and one hour lecture. *Required of freshmen.* Text: *Circular 29, Purdue University.*

MR. BRANSON.

1b. LIVE STOCK JUDGING ($1\frac{1}{2}$)—Scoring and judging breed types of horses, cattle, sheep and swine. Special emphasis is placed on comparative judging. Breed characteristics are given special attention and placings are made from breeders' and show-yard standards. *Prerequisite:* Animal Husbandry 1a. *Required of Sophomores.* Text: *Gay's Principles and Practice of Judging Live Stock.*

MR. BRANSON.

2a. POULTRY HUSBANDRY ($1\frac{1}{2}$)—The general care and management of poultry, production of poultry for the market, hatching and raising chicks, feeding, diseases, pests, and breed characteristics. Recitations and lectures. Elective. Text: *Lewis' Productive Poultry Husbandry.*

PROFESSOR DVORACHEK.

2b. ELEMENTS OF DAIRYING (2)—The lectures and recitations include a study of the secretion and composition of milk; the causes of variation in composition; abnormal milk and its causes; bacteria in milk products; the Babcock test as applied to milk, cream and other products; the lactometer, and milk adulteration; milk preservatives; the various methods of cream raising, including a study of the construction and operation of centrifu-

gal separators; methods of making and marketing butter; proper handling of milk on the farm, etc. The laboratory work includes testing milk and its products, operation of different kinds of cream separators, and butter making. Six hours' laboratory and two hours' lectures and recitations. *Prerequisite:* Chemistry 1. Text: McKay and Larson's *Principles and Practice of Butter Making*.

PROFESSOR DVORACHEK.

MR. QUIST.

3a. HISTORY OF BREEDS ($1\frac{1}{2}$)—The characteristics of each breed of horses, cattle, sheep, swine, goats and jacks are considered at length. Each breed is discussed with reference to its origin, history, development and adaptation to American conditions. Recitations and lectures. *Prerequisite:* Animal Husbandry 1a and 1b. Text: Plumb's *Types and Breeds of Farm Animals*.

MR. BRANSON.

3l. PEDIGREE WORK (2)—The library of herd register books will be used for this work. Students will be taught the use of these books in writing of extended pedigrees. Methods and forms of registration and transfer of pure bred animals will also be taken up. To be taken with Animal Husbandry 3a. Four hours' laboratory.

MR. BRANSON.

3b. DAIRY STOCK JUDGING (1)—Show yard judging of dairy cattle; classification of different rings, comparative judging. Trips made to large herds owned by neighboring dairymen and other herds in the state. This work is designed to select and train a judging team for the National Dairy Show. Required of all students who are candidates for this judging team. *Prerequisite:* Animal Husbandry 1a, 1b, 3a and 3l.

4a. FEEDS AND FEEDING ($1\frac{1}{2}$)—The principles of animal nutrition composition and digestibility of various feeds; construction and use of silos; balanced rations; economical feeding of animals for various purposes. Required of students majoring in Animal Husbandry. Text: Henry's *Feeds and Feeding*. *Prerequisites:* Chemistry 1 and 3.

PROFESSOR DVORACHEK.

4b. ANIMAL BREEDING ($1\frac{1}{2}$)—A study of the various systems of animal breeding, and the application of the principles of genetics to practical animal breeding. For advanced students. *Prerequisite:* Agronomy 8a.

MR. BRANSON.

5a. PORK PRODUCTION (1)—An advanced study of the types, breeds and market classes of swine with special reference to fa-

mous strains, families, and individuals; the most economical methods of growing and finishing market hogs; the selection, care and management of breeding stock and methods of housing, yarding and pasturing swine. Text: Day's *Productive Swine Husbandry*. Prerequisite: Animal Husbandry 1a, 1b, 3a, 3l and 4a. MR. BRANSON.

5b. MILK PRODUCTION (1)—A study of the dairy herd and the production of milk from the standpoint of the farmer and the special dairyman; the leading breeds of dairy cattle; special reference to famous families and individuals; their adaptations to dairy purposes; the selection, breeding and building up of a dairy herd; feeding for milk production, etc. Prerequisite: Animal Husbandry 1a, 1b, 2b, 3a, 3l and 4a. Text: Eckle's *Dairy Cattle and Milk Production*. PROFESSOR DVORACHEK.

6a. HORSE PRODUCTION (1)—Feeding, care and management, including a study of the most economical feeds for maintenance, light, medium and heavy work; pasture crops, etc. Feed and management of stallions, brood mares and colts. Stabling and grooming, breeding and training of horses. Text: Gay's *Productive Horse Husbandry*. Prerequisite: Animal Husbandry 1a, 1b, 3a, 3l and 4a. MR. BRANSON.

6b. BEEF, MUTTON AND WOOL PRODUCTION (1½)—The practical application of the study of leading breeds and market classes of beef cattle and sheep, especially emphasizing the history of famous strains, families and individuals of each breed. The most approved methods of management for the economical production of beef, mutton and wool will be considered. Problems in management will be assigned. Prerequisite: Animal Husbandry 1a, 1b, 3a, 3l and 4a. MR. BRANSON.

7a. ADVANCED LIVE STOCK JUDGING (1½)—Show yard judging, classification of different rings, comparative judging, trips made to large herds in different sections of the country and students required to spend several days attending county and state fairs judging livestock. This work is designed to select and train a judging team for the International Livestock Show. Required of all students who are candidates for this judging team. Prerequisite: 1a, 1b, 3a and 3l. PROFESSOR DVORACHEK.

MR. BRANSON.

7b. ADVANCED POULTRY HUSBANDRY (1½)—An advanced course treating of factors influencing egg production, grading

and marketing eggs, practice in hatching and raising chicks, planning poultry houses and yards, poultry judging, and visiting commercial plants. Special topics on related subjects will be assigned. *Prerequisite:* Animal Husbandry 2a.

PROFESSOR DVORACHEK.

8a. CREAMERY WORK—DAIRY MECHANICS (1)—Practice in the operation of a creamery in butter, cheese and ice cream making; pasteurization, pure culture starters; cream ripening; cream grading; churning, working, printing and marketing butter; cheese making and ice cream making. Shop practice with engines, boilers, artificial refrigeration machinery, creamery machinery, pipe fitting, belt lacing, etc. *Prerequisite:* Animal Husbandry 2b.

MR. QUIST.

9. THESIS WORK (2)—The work will consist of a written treatment covering data of some original experiment carried on under the direction of the instructor in charge. Required of all students majoring in Animal Husbandry.

AGRICULTURAL EXTENSION SERVICE

IN COÖPERATION WITH UNITED STATES DEPARTMENT OF
AGRICULTURE

W. C. LASSETTER, Director of Extension; W. R. WHEELOCK, J. H. MCLEOD, MARCELLA ARTHUR, EARL KILPATRICK, J. S. KNOX, W. A. DENMAN, F. E. ANDERSON, J. M. BORDERS, Specialists; C. W. WATSON, State Agent; W. J. JERNIGAN, EMMA ARCHER, Assistant State Agents; J. C. BARNETT, R. C. DAVIDSON, H. F. KAPP, District Agents; Fifty-two County Demonstration Agents, Nineteen Women Demonstration Agents.

Under the provisions of the Smith-Lever Act the Extension Service of the College of Agriculture will be greatly enlarged.

Extension work includes all service, except investigative work, rendered to citizens of the state not in attendance at the University. The Extension Service is intended to carry as nearly as possible to all the people the benefits of all investigations of the State Experiment Station of the University, and all available information supplied by the U. S. Department of Agriculture, the various State Experiment Stations and any other source of helpful information.

All extension work in the state, including Farm Demonstration and Boys' and Girls' Club work, is now organized into one whole, managed jointly by the College of Agriculture of the University and the U. S. Department of Agriculture.

The Extension Service organizes farm schools to be conducted in the various counties by men from the extension force or from the faculty of the College of Agriculture and from the United States Department of Agriculture, together with other agricultural agencies of the state; offers lectures and demonstrations at teachers' institutes, public school gatherings, and farmers' clubs; meets demands for exhibits, demonstrations, lectures, and judgments at fairs; supplies agricultural news and information to the press of the state; and conducts correspondence courses covering all important phases of agriculture.

CORRESPONDENCE COURSES

The correspondence courses are adapted to the needs of persons who wish to acquire further information on agricultural subjects but cannot come to the college for study. For best results the student should have a good common school education.

The only expense to the student is the cost of the prescribed texts and manuals and the postage on matter mailed to the Department. A bulletin containing full information will be mailed to any resident of the state upon application.

CORRESPONDENCE COURSES

COURSE I—Soils and Fertilizers. Price of texts, \$2.60.

COURSE II—Farm Crops. Price of texts, \$1.75.

COURSE III—Feeds and Feeding. Price of texts, \$1.50.

COURSE IV—Dairy Cattle and Dairying. Price of texts, \$1.35.

COURSE V—Beef Cattle and Swine. Price of texts, \$2.00.

COURSE VI—Horses, Mules and Sheep. Price of texts, \$3.15.

COURSE VII—Livestock Breeding. Price of texts, \$1.50.

COURSE VIII—Poultry Culture. Price of texts, \$2.00.

COURSE IX—Livestock Diseases and Veterinary Practice. Price of texts, \$1.50.

COURSE X—Farm Systems and Business Management. Price of texts, \$1.75.

COURSE XI—Horticulture (fruits). Price of texts, \$1.50.

COURSE XII—Trucking and Market Gardening. Price of texts, \$2.00.

COURSE XIII—Principles of Canning and Preserving. Price of texts, \$1.65.

COURSE XIV—Landscape Gardening for Home and School. Price of texts, \$2.00.

COURSE XV—Home and School Sanitation. Price of texts, \$1.50.

COURSE XVI—Elementary Agriculture for Rural Teachers. Price of texts, \$1.50.

COLLEGIATE COURSES

I. PUBLIC SCHOOL AGRICULTURE (3)—A course in general agriculture designed to prepare students to teach the subject in the public schools of the state. The course includes both lectures and laboratory work. M. or W. 6. Laboratory Tu. and Th. 6-7 or W. and F. 3-4. *Required of all Normal Students.*

MR. BORDERS.

THE SHORT COURSE IN AGRICULTURE

Required of all Short Course Students.

	Hours a Week
Agronomy: Soils, fertilizers, tillage.....	3
Agronomy: Field crops, cultural methods, corn and grain judging	6
Animal Husbandry: Live stock judging.....	4
Animal Husbandry: Feeding and live stock management	2
Veterinary Science: Common diseases of live stock and methods of treatment	5
Bacteriology and Pathology: Farm sanitation.....	1
Horticulture: Plant propagation and orchard practice.....	4
Mechanical Engineering: Blacksmith shop work, silo construction, concrete mixing	6

In addition the student will elect one of the following courses:

	Hours a Week
Course I—Agronomy—Cotton: cultural methods. Animal Husbandry: Dairying; the handling of milk and its products	6
Course II—Agronomy: Cotton grading and marketing. Entomology: Field crop insects and diseases.....	6
Course III—Animal Husbandry: Poultry and stock breeding. Animal Husbandry: Dairying and handling of milk and its products	6

Course IV—Animal Husbandry: Poultry and stock breeding. Entomology and Plant Pathology: Field crop insects and diseases.....	6
Course V—Horticulture: Home and commercial gardening and truck growing.....	6
Course VI—Entomology and Plant Pathology: Orchard insects and diseases and their control.....	6

HOME ECONOMICS

MISS PETTIT, MISS METZGER.

The Department of Home Economics offers a four years course leading to the degree of B. S. in Home Economics, with a major in Domestic Science or Domestic Arts. It also offers a two years course leading to a certificate of Licentiate of Instruction (see School of Education).

Courses are open to all regularly matriculated women students. Entrance requirements are the same as for College of Agriculture, pages 22, 23.

A laboratory fee of five dollars is required for each semester of cookery. All students in cookery classes must furnish themselves with large white aprons for use in the laboratory. Students in the sewing classes are required to furnish all materials used by them.

Electives must be chosen under direction of the major professor.

Required of all Candidates for the Degree, B. S. in Home Economics

FRESHMAN YEAR

	Hours a Week
Biology 1, General Biology.....	3
Chemistry 1, Elementary Chemistry.....	4
English 1, Rhetoric and English Composition.....	3
Modern Language	3
Home Economics 30a and 30b, Elementary Sewing.....	2
Home Economics 3, Survey	2

SOPHOMORE YEAR

	Hours a Week
Chemistry	2
English 2, History and Development of English Literature in outline.....	3

Modern Language	3
Physics	4
Home Economics 10a and 10b, Elementary Cooking.....	3
Elective	2

JUNIOR YEAR—MAJORS IN DOMESTIC SCIENCE

	Hours a Week
Biology, Physiology	3
Home Economics 2, Advanced Cookery.....	3
Chemistry	2
Elective	8

JUNIOR YEAR—MAJORS IN DOMESTIC ART

	Hours a Week
Biology, Physiology	3
Home Economics 31, Dressmaking	2
Home Economics 34a and 34b, Textiles and Costume and Design	3
Elective	8

SENIOR YEAR

	Hours a Week
Home Economics 40a and 40b. Nutrition and Dietetics....	3
Home Economics, Household Management.....	2
Elective	11

DESCRIPTION OF COURSES IN HOME ECONOMICS

1a. PRESENTATION OF DOMESTIC SCIENCE (1)—This course deals with the methods of teaching Domestic Science in elementary and secondary schools. Industrial and vocational training are discussed.

1b. PRESENTATION OF DOMESTIC ART (1)—The place of Domestic Art in the curriculum and the method of presenting the subject to classes are considered. *Prerequisite:* Education 1a, 20b, 22a and 23b. Tu. Th. 5.

2. TEACHING (4)—Students are required to teach Home Economics six hours a week in the Training School of the University. *Prerequisite:* Home Economics 1.

3. SURVEY (2)—The lectures in this course deal with a study of Home Economics in relation to education, home and society. Tu. and Th. 2.

10a. FOODS (1½)—This course includes a classification of food materials, their selection, method of preparation, and cost. *Prerequisite:* Chemistry 1. Laboratory and lectures six hours a week. M. W. 5, 6, 7; Tu. Th. 5, 6, 7.

10b. HOME COOKERY (1½)—The object of this course is to

present the problems of the home dietary. Marketing and economy are emphasized. Table appointments and service are considered. *Prerequisite:* Home Economics 10a. Laboratory and lectures six hours a week. M. and W. 5, 6, 7; Tu. and Th. 5, 6, 7.

11. FOODS (4)—This course includes the planning of menus, the purchasing of foods, and the preparation and serving of luncheons. *Prerequisite:* Home Economics 10b. Laboratory and lecture six hours a week. M. W. F. 3, 4.

20a. NUTRITION ($1\frac{1}{2}$)—The lectures and discussions deal with the fundamental principles of the digestion of foods, their absorption, assimilation and disposal of end products. *Prerequisite:* Home Economics 10b. M. W. F. 2.

20b. DIETETICS ($1\frac{1}{2}$)—The principles of nutrition are applied to the diet. Balanced dietaries are planned and prepared with special reference to the composition and seasonableness of foods, and to the family income. *Prerequisite:* Home Economics 20a. M. W. F. 2.

21b. CARE AND FEEDING OF CHILDREN (1)—The lectures in this course deal with the following topics: a physiological knowledge as a basis for rational care of the child. Proper habits of bathing, dressing and feeding of small children are discussed. Tu. Th. 4.

25b. COMMERCIAL FOOD STUFFS ($1\frac{1}{2}$)—The more important phases of the processes of the manufacture and production of commercial food stuffs are studied. Their sanitation, economy and place in the daily menu are considered.

30a. SEWING ($1\frac{1}{2}$)—In this course practice in hand sewing is given in plain and ornamental stitches, and in darning and patching. Care and use of the sewing machine and simple machine problems are considered. Laboratory six hours a week. M. W. F. 1, 2; Tu. Th. 5, 6, 7.

30b. SEWING ($1\frac{1}{2}$)—The drafting of simple patterns and the adaptation and use of commercial patterns are taught. Undergarments, including both hand and machine-made, and a linen or cotton dress are made. *Prerequisite:* 30a. Six hours laboratory. M. W. F. 1, 2; Tu. Th. 5, 6, 7.

31. ADVANCED SEWING (3)—This course consists of drafting patterns, designing and constructing winter and spring dresses.

Instruction in the principles, technique and application of costume design is included. *Prerequisite:* 30b. M. W. F. 5, 6, 7.

32. MILLINERY AND ART NEEDLEWORK (2)—The construction of wire and buckram hat frames, bows and flowers and the renovation of materials for hat trimming, are taught. Instruction in various types of art needlework is included. The making of fall and spring hats is required. Four hours' lecture and laboratory work a week. *Prerequisite:* 30b, Art 2. M. W. 3, 4.

34a. TEXTILES (1)—The source of supply, the structure, manufacture, and relative value of fabrics, and methods of determining their adulteration are presented. Two lectures a week. Tu. Th. 6.

40b. HOME FURNISHING AND DECORATION (1)—This course presents the principles of design and color applied to interior decoration. Furnishings of the home are considered as to economy, style and appropriateness. It also presents problems in the cost and selection of floor and wall finishes, hangings, floor coverings and furniture. Tu. Th. 6.

THE AGRICULTURAL EXPERIMENT STATION

The purpose of the Experiment Station is to determine facts, work out problems and make investigations that have a bearing upon the agriculture of the state and the country in general. The results of investigations are published in bulletin form and distributed free. All information in possession of the various departments of the institution is available to citizens of the state upon demand. The farmer is in this way relieved of the time, labor and expense involved in working out experiments for himself. He also receives the benefit of facts that only the best trained specialists are capable of determining. Practically all of the agricultural information that we possess and put into practice is based upon experiment station effort.

DEPARTMENTS OF THE STATION

The Office of the Director of the Experiment Station is in the Agricultural Building.

The Department of Bacteriology and Animal Pathology has its office and laboratory in the Experiment Station Building. The department conducts investigation and research relative to the causes and character of animal diseases and means of combating them.

The Department of Horticulture has its offices in the Experiment Station Building. It has a greenhouse, in which forcing experiments and other experiments in plant propagation are carried on. The orchards and grounds in charge of this department contain many varieties of apples, pears, plums, cherries, and small fruits, which serve as material for experiments with varieties, methods of culture, pruning and spraying.

The Department of Agronomy has its office on the second floor of the Agricultural Building. This department carries on investigations with farm crops, testing and breeding new and pure varieties of cotton, corn, grains, grasses for hay, pasture and cover crops and other agricultural crops. It also carries on experi-

ments in soil fertility and the management of soils for different crops. The work of this department is conducted on the station farm and at the substations. A special feature is the work with cotton and corn at the substations of the southern part of the state.

The Department of Plant Pathology has its office and laboratory in the Experiment Station Building. This department carries on investigation of plant diseases with reference to their nature, cause of development, and means of combating and eradicating them. The department is equipped with excellent apparatus for its investigations.

The Department of Veterinary Science is situated in the Experiment Station Building. State inspection for contagious diseases of animals and for the eradication of cattle tick is supervised by this department; it investigates the best means of checking and stamping out diseases of animals.

The Department of Chemistry is situated in the Experiment Station Building. Its laboratories are fitted with improved modern apparatus. This department carries on investigations along chemical lines.

The Department of Entomology has its office and laboratories on the first floor of the Agricultural Building. Investigations are conducted by this department in life histories of insects injurious to agriculture and methods of exterminating such insects. Orchard nursery inspection is a feature of the work.

The Department of Animal Husbandry is situated in the Dairy Building. This department carries on investigations in feeding, breeding, and care of farm animals, including poultry. Its special feature is a well-selected herd of hogs, representing several breeds, on which various feeding and breeding tests are made. In connection with this department is a model dairy, equipped with improved dairy machinery and well equipped with laboratories. The dairy is conducted on an economic basis.

THE COLLEGE OF MEDICINE

FACULTY

- JOHN CLINTON FUTRALL, M. A., *President of the University*
MORGAN SMITH, M. D., *Dean, Professor of Pediatrics*
F. L. FRENCH, M. D., *Emeritus Professor of Surgery*
FRANK VINSONHALER, M. D., *Professor of Diseases of Eye, Ear,
Nose and Throat*
ANDERSON WATKINS, M. D., *Professor of Genito-Urinary Diseases*
CALEB E. WITT, M. D., *Professor of Materia Medica and Thera-
peutics*
J. P. RUNYAN, M. D., *Professor of Surgery*
M. D. OGDEN, M. D., *Professor of Gynecology*
WM. R. BATHURST, M. D., *Professor of Dermatology and Syph-
ilology*
S. C. SHIPP, M. D., *Professor of Pathology and Bacteriology*
J. C. CUNNINGHAM, M. D., *Professor of Obstetrics*
A. E. HARRIS, M. D., *Professor of Clinical Medicine*
O. K. JUDD, M. D., *Professor of Medicine*
CARLE E. BENTLEY, M. D., *Professor of Surgery*
WM. A. SNODGRASS, M. D., *Professor of Surgery*
D. W. ROBERTS, M. D., *Associate Professor of Mental and Ner-
vous Diseases*
JOHN G. WATKINS, M. D., *Associate Professor of Diseases of
Eye, Ear, Nose and Throat*
DAN R. HARDEMAN, M. D., *Associate Professor of Pediatrics*
ROBERT L. SAXON, M. D., B. S., *Associate Professor of Gynecology*
OSCAR GRAY, M. D., *Associate Professor of Gynecology*
ROBERT CALDWELL, M. D., *Associate Professor of Eye, Ear, Nose
and Throat*
O. A. CARRUTH, *Associate Professor of Obstetrics*
HENRY THIBAUT, M. D., *Associate Professor of Medicine*
C. S. PETTUS, *Lecturer on Ethics and Medical History*

- C. W. GARRISON, M. D., *Lecturer on Tropical Medicine*
R. C. KORY, B. A., M. D., *Associate Professor of Medicine*
J. V. FALISI, M. D., *Instructor in Clinical Medicine*
S. P. BOND, M. D., *Associate Professor in Genito-Urinary Diseases*
HOMER A. HIGGINS, *Assistant in Surgical Pathology*
STANLEY M. GATES, M. D., *Assistant in Surgical Pathology*
R. L. FLOYD, *Assistant Lecturer on Medical Jurisprudence*
M. E. DUNAWAY, B. A. LL. B., *Lecturer on Medical Jurisprudence*
DEWELL GANN, JR., *Professor of Surgical Technic*
EDWIN BENTLEY, M. D., U. S. A. (retired), *Emeritus Professor of Surgery*
A. R. STOVER, M. A., *Professor of Chemistry*
J. L. DIBRELL, M. D., *Professor of Anatomy*
JAMES L. GREENE, M. D., *Professor of Mental and Nervous Diseases*
E. M. PEMBERTON, M. D., *Professor of Physiology and Pharmacology*
D. A. RHINEHART, M. D., *Associate Professor of Anatomy*
A. G. MCGILL, M. D., *Lecturer on Medicine*
A. M. ZELL, M. D., *Lecturer on Electro-Therapeutics*
H. H. KIRBY, M. D., *Associate Professor of Anatomy*
S. P. VAUGHTER, M. D., *Lecturer on Materia Medica*
C. R. CHESTNUTT, M. D., *Lecturer on Materia Medica and Pharmacology*
CHAS. E. OATES, B. A., *Laboratory Instructor in Chemistry*
J. P. SHEPPARD, M. D., *Clinical Instructor in Medicine*
J. B. DOOLEY, *Instructor in Clinical Medicine*
CHAS. BROOKOVER, Ph. B., A. M., *Professor of Histology and Embryology*
A. B. COON, *Instructor in Anesthetics*
CHAS. S. HOLT, M. D., *Associate Professor of Surgery*
EUGENE F. BUCKLEY, *Lecturer on Oral Hygiene*
E. O. DAY, *Assistant in Materia Medica and Therapeutics*
IDA JOE BROOKS, *Lecturer on Social Service*
GEO. H. SCIARONI, *Assistant in Clinical Laboratory*
SHELBY ATKINSON, *Lecturer on Clinical Medicine*

THOS. H. CATES, *Assistant in Diseases of Eye, Ear, Nose and Throat*

W. T. MCCURRY, *Assistant in Diseases of Eye, Ear, Nose and Throat*

E. M. HUDSON, *Assistant in Diseases of Eye, Ear, Nose and Throat*

C. N. PATE, *Assistant in Diseases of Eye, Ear, Nose and Throat*

J. H. LENOW, M. A., M. D., *Emeritus Professor of Genito-Urinary Diseases*

HISTORY

The Medical Department of the University was organized at Little Rock in 1879. In 1911 it was consolidated with the College of Physicians and Surgeons and by an act of the general assembly became the Medical College of the University of Arkansas.

ADMISSION

The College of Medicine is co-educational.

Admission to the College may be by examination or by certificate.

Admission by Certificate. For admission candidates must present fourteen units of high school work, these units being the same as those required for admission to the colleges at Fayetteville.

Required are:

English, 3 units; algebra, $1\frac{1}{2}$ units; plane geometry, 1 unit; history, 1 unit; physics, 1 unit; Latin, 2 units. For the 2 units of Latin, 4 units of either French or German may be substituted, provided a satisfactory examination in the elements of Latin grammar is passed.

Four and one-half additional units must be presented, selected from the following: Latin, 2 units, in addition to the 2 units required; Greek, 3 units; French, 3 units; German, 3 units; English, 1 unit in addition to the 3 units required; physical geography, $\frac{1}{2}$ unit; physiology, 1 unit; botany, 1 unit; zoölogy, 1 unit; biology, 1 unit; chemistry, 1 unit; civics, $\frac{1}{2}$ unit; agriculture, 1 unit; pedagogy, $\frac{1}{2}$ unit; psychology, $\frac{1}{2}$ unit; manual training, $\frac{1}{2}$ unit.

Admission by Examination. Students who do not present acceptable credentials will be required to stand examinations for entrance. The examinations will cover the subjects required for admission by certificate and will be conducted according to the rules governing examinations for admission to the other colleges of the University.

The entrance examinations will be held at Little Rock by the State Superintendent of Public Instruction or by his authorized representative.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine (M. D.) is conferred on candidates who have met the requirements for graduation.

Candidates for the M. D. degree must be twenty-one years of age, must present satisfactory evidence of good moral character, and must have complied with the entrance requirements of this College.

Candidates must have attended and satisfactorily completed four courses of lectures, no two of which shall have been attended in the same calendar year. Three years of the required work may have been done in some other medical college or colleges of recognized standing whose requirements are equivalent to those of this college. The last year of the four years' work must be done in the Medical College of the University of Arkansas.

EQUIPMENT

Buildings and Laboratories. The main building, erected in 1890, is a three-story brick structure containing a lecture hall, amphitheater, museum, dissecting room and laboratories. A second building occupied chiefly by laboratories, has been outgrown, and the east wing of the old state capitol is used for laboratories of chemistry, embryology, histology, physiology, pathology, bacteriology, clinical microscopy, surgical pathology and pharmacology. These laboratories are well equipped with new apparatus and supplies. The space is ample and the rooms are well lighted.

HOSPITAL AND CLINICAL FACILITIES

The Logan H. Roots Memorial Hospital. This public city hospital was founded by the late Logan H. Roots. Closed corri-

dors connect the hospital with the clinical amphitheaters of the college building. A large medical and surgical dispensary is connected with this hospital.

The Pulaski County Hospital. This hospital is situated in the southwestern part of the city and has a capacity of two hundred beds. A feature of the hospital is the cottage treatment of tuberculosis. Clinics are held at the hospital throughout the session.

The University Hospital. The College has perfected arrangements with Dr. E. Meek, the owner of the University Hospital, by which students will receive instruction in the hospital. It is well equipped with modern operating rooms and has a capacity of one hundred beds. It has rooms especially arranged for the care of acute nervous and mental diseases and the treatment of inebriety and narcotic habits; and maternity wards for the care of obstetrical cases.

The Isaac Folsom Clinic. This clinic was named in honor of the late Dr. Isaac Folsom, in consideration of his gift of an endowment of \$20,000. This clinic is under the direct and exclusive control of the faculty, and all its material is available for teaching purposes.

St. Vincent's Infirmary. St. Vincent's Infirmary, designed solely for the treatment of acute diseases, has a capacity of nearly two hundred beds. The hospital is splendidly equipped and conveniently situated. It is under the supervision and management of Sisters of Charity who are trained nurses.

St. Luke's Hospital. This new hospital for surgical and gynecological cases has been opened recently by a member of the faculty. It is modern in all its appointments.

STATE INSTITUTIONS

All of the eleemosynary institutions of the state are situated in Little Rock. These include the School for the Blind, the School for Deaf Mutes, the State Hospital for Nervous Diseases, the Penitentiary, the Reform School, County and City Hospitals, etc., all of which contribute to the available clinical material.

EXPENSES

Fees

Tuition Fee, per annum	\$125.00
Graduation and Diploma Fee	25.00

There are no other fees, but in the first and second year courses in chemistry a \$10.00 deposit to cover breakage, etc., is required; in the third year a \$3.00 deposit is required. After the necessary deductions, the balance of a deposit is refunded.

Living Expenses

Board and lodging, including fuel and lights, may be had at a cost of \$4.00 to \$6.00 a week or of \$15.00 to \$20.00 a month.

Hospital Appointments

At the *Logan H. Roots Memorial Hospital* the staff annually appoints two resident physicians to serve twelve months each.

At the *University Hospital* Dr. E. Meek and his staff appoint two resident physicians every year.

At *St. Vincent's Infirmary* the staff selects two internes every year.

At the *Pulaski County Hospital* Dr. J. P. Sheppard and his staff select four internes every year.

At the *State Hospital for Nervous Diseases* the staff selects ten internes every year.

Appointment to the foregoing hospital positions is determined by competitive examinations. These examinations are held in the spring of the year and may be taken by graduates of the Medical College of the University of Arkansas.

ANNOUNCEMENT

Address Dr. Morgan Smith, Dean of the Medical College of the University of Arkansas, Little Rock, Arkansas, for the special *Bulletin of the Medical College*. The bulletin will give information in detail.

THE BRANCH NORMAL COLLEGE

FACULTY

WILLIAM STEPHEN HARRIS, SUPERINTENDENT, *Head of Mechanical Department, Instructor in Woodwork*

FREDERICK THOMAS VENEGAR, PRINCIPAL, *Psychology, Physical Science, Pedagogy*

A. R. REEVES, B. A., *Mathematics, Botany*

J. G. IRISH, JR., A. B., *Mathematics, Physiology*

H. M. TAYLOR, *History, Civil Government*

C. P. McLURKIN, M. A., *Agriculture, Chemistry, Physics*

ERNESTINE I. COPELAND, B. A., *English*

IRENE C. ROSS, *English, Geography*

CHRISTINE RAMBO, B. M., *Vocal Music, History*

MAYME J. BLAKEMORE, *Sewing*

W. P. KOON, *Machine Shop and Forge*

The Branch Normal College is situated at Pine Bluff, Arkansas. It was established pursuant to an act of the general assembly of Arkansas, of April 27, 1873, and has been in operation since 1875.

Its purpose is to provide industrial training and to train teachers for efficient service in the colored public schools of the state.

PROPERTY AND BUILDINGS

The school property consists of twenty acres of land in the western suburbs of Pine Bluff.

The buildings include a two-story school building, containing an assembly hall, six class rooms, and cloak rooms; well equipped mechanical shops; and a dormitory for women.

ADMISSION

Candidates for admission must be at least thirteen years of age and must pass a satisfactory examination in arithmetic,

English grammar, geography, and United States history such as is covered in the fifth grade. Those coming from other schools must furnish evidence of satisfactory deportment and class standing.

APPOINTMENT OF BENEFICIARIES

Beneficiary students may be appointed by the county judge of each county of the state. Students who receive these appointments pay no tuition fees.

FEEES AND EXPENSES

The *matriculation fee* is \$5.00.

For students not having appointments, *entrance fee*, \$5.00.

Board, fuel, and light in the women's dormitory, \$8.00 a month.

Tuition, \$1.00 a month.

All fees are payable in advance.

DEPARTMENTS OF THE BRANCH NORMAL COLLEGE

Preparatory Department. In the preparatory department the foundation academic subjects are studied. The work of the department corresponds to sixth, seventh and eighth grade public school work.

Normal Department. To enter the normal department the student must have completed the work of the preparatory department. The purpose of the normal department is to prepare students for teaching. Upon satisfactory completion of the four years' course of study, students receive the L. I. (Licentiate of Instruction) Certificate.

Industrial Department. Beginning with the second year in the preparatory department, all students are required to pursue certain industrial courses. The industrial work extends through four years, and the completion of the work is attested by a certificate of efficiency.

Young men do shop work in mechanic arts, carpentry, and cabinet making, and have the opportunity to become skilled blacksmiths, machinists, engineers or firemen.

Young women are taught plain sewing, cutting and fitting, and art needle-work.

Agricultural Department. In this department two courses of study are offered, one designed especially for students who are preparing to teach in the public schools, and a second course, for those who intend to teach agriculture. The latter course includes work in agronomy, farm economics, and kindred subjects.

LITERARY SOCIETIES AND RHETORICALS

The *Phyllis Wheatley Literary Society* is a literary society for young women; the *Philosophian Literary Society* is a society for young men.

Rhetoricals. Public rhetorical exercises are held once each month. All students are required to take part in these exercises.

ATHLETICS

There is an athletic association for young men and a similar association for young women.

DIVISION OF EXTENSION

By the inauguration of the Division of Extension, the University of Arkansas plans to offer to every community and to each citizen of the state the advantages of an education of high school, college, or university grade, as well as to offer training in vocational and technical subjects. This policy has been approved by the Board of Trustees and an administrative organization provided. In order that the University may render to the entire state the service which the people have a right to demand, the University intends to increase its extension staff, to multiply the various forms of extension activities, and to work out a unified plan that will enable it to reach all the people systematically and effectively with educational influences.

At present the work of the Division of Extension is divided into three departments: first, Correspondence Study; second, Lectures and Addresses; third, General Information.

STUDENTS. Courses offered by the Department of Correspondence Study are especially planned for two classes of students: first, men and women who desire to pursue studies included in a liberal education of the character and grade of a high school or college, but without any reference to an academic degree; second, those who intend to qualify themselves for academic recognition or to increase their professional efficiency.

WORK OFFERED

HIGH SCHOOL WORK.—The Division of Extension offers some of the secondary courses usually found in the better high schools of the state. These courses not only prepare students for entrance into college, but are of just as great value to the young men and women of Arkansas who are going out as active workers without the advantages of college training.

These courses are not intended to conflict or compete with the high schools of the state. Their object is to reach, first, those

students who reside in rural communities or small towns that do not support first grade high schools; secondly, persons who for any reason find it impossible to attend their local high schools, or to obtain in those high schools certain courses which they desire.

WORK FOR COLLEGE CREDIT.—A large proportion of the courses offered by the University may be done by correspondence for college credit. No degree, however, will be conferred on any one who does not take at least one year's work in residence at the University, and as a rule this must be the final year of the course.

VOCATIONAL STUDIES.—As the demand for them arises, the University will offer all the industrial courses possible for the benefit of persons engaged in the various vocations, trades and crafts.

COURSES NOT YET OFFERED.—It is the intention, as soon as possible, to add other courses to those listed in the bulletin of extension. Inasmuch as the work is new in the State of Arkansas, and it is not yet known for what kind of work the demand will be greatest, those who do not find in this bulletin a course which they desire to take are invited to write to the Division of Extension and state their wants. Such a course will be given as soon as a sufficient number of applications are received to warrant it.

PROCEDURE AND ADMINISTRATION

HOW TO REGISTER FOR COURSES.—Application blanks will be sent free of charge to all applicants who wish to enroll in any course offered by the Division of Extension of the University. These application blanks should be carefully filled out and returned to the Division of Extension with the fee or fees required.

INSTRUCTION.—Upon receipt of the fee for any course, the first lesson in that course is mailed to the student together with directions for filling out and returning the lesson sheets. A reasonable length of time is allowed for completing each assignment, at the end of which the student will send back his report of the assignment, always enclosing postage for the return of his papers. The lessons and reports, once corrected, are mailed back to the

student with such suggestions as the instructor may deem advisable. The number of assignments, or lessons, for the various courses vary with the subject matter of each course. The number of credit hours to be obtained by completing each course is found in the description of the course.

EXAMINATIONS.—As a rule, examinations are optional with the student. They are required, however, of all students seeking credit, either entrance or college, and examinations for credit must be taken at the University or under conditions named by the University. These conditions will never entail a hardship upon the student.

EXPENSES.—A fee of \$5.00 will be charged for each semester course, or \$10.00 for a course running through a year, in addition to which the student will pay the return postage on his papers. All fees are non-returnable. A list of texts to be used, together with the publishers and cost of the books, will be sent with the first lesson of each course.

Correspondence work will be carried on in the summer so far as is possible, but it cannot be promised that in all cases assignments sent in the summer will be promptly corrected and returned.

REGULATIONS

1. Students may enroll in the correspondence courses at any time through the year.

2. The average student is expected to complete a semester course in from four to six months, but he has the privilege of completing any such course in less than four months. A semester course must be completed within twelve months from the time of registration.

3. Not more than two courses may be taken by correspondence at one time.

4. College credit is granted only to students who have met the entrance requirements of the University. For unconditioned entrance a student must present 14 units of high school work. A unit is defined as a high school study pursued for a year with daily recitations of 45 minutes each; it is also defined as approximately one-quarter of a full year's work in a high school.

5. Students who enroll in correspondence study for a university degree must comply with all the requirements of the col-

lege of school in which such degree is sought. Each University degree is given for the completion of a four-year course of approximately 16 hours a year.

6. Resident students of the University are not allowed to take work by correspondence.

STUDY CENTERS

Just as soon as funds will permit, University Extension Centers will be organized in connection with correspondence studies. This will be possible only where a sufficient number of students in the same town are taking the same course to justify the expense of sending a member of the faculty to that town from time to time to lecture on the subject matter of the course, and to give individual help to the students enrolled. For the time being this can be done only where the students themselves care to pay the actual traveling expenses of the instructor.

Complete information with regard to University Extension, including a descriptive list of courses offered by the College of Arts and Sciences and of Engineering, will be sent on application to The Division of Extension, University of Arkansas, Fayetteville.

LIST OF STUDENTS, 1914-1915

EXPLANATION OF ABBREVIATIONS

A.....	College of Arts and Sciences
E.....	College of Engineering
Ed.....	School of Education
Ag.....	College of Agriculture
H E.....	Department of Home Economics
U.....	Unclassified
F.....	Freshman
So.....	Sophomore
J.....	Junior
Sr.....	Senior
S.....	Special
s.....	Short Course
Gr.....	Graduate

Name	Course	Home Address
Adams, John Dudley	Ag-F	Little Rock
Albright, Chester	A-So	Fayetteville
Alexander, James W.	Ag-F	Paragould
Alexander, Reba	A-Sr	Little Rock
Allbaugh, Byron Dayne	E-s	Bismark, Okla.
Allen, Glen Luman	E-J	Prescott
Allen, Katherine Wood	A-F	Fayetteville
Allis, Dave Mills	E-s	Little Rock
Allpin, Amelia Laverne	Ed-F	Pocahontas
Amis, James Westerfield	A-F	Fort Smith
Apperson, Samuel Marshall	E-F	Little Rock
Armstrong, A. B.	A-J	Wynne
Arnold, Carrie	H E-J	Pine Bluff
Arnold, Clara May	A-Sr	Fort Smith
Ashby, Estell Joseph	E-s	Fayetteville
Ashley, Louise	A-F	Morrilton
Ashley, Marie C.	U	
Atkinson, Edwin Judson	E-F	Star City
Atkinson, Pearl	A-S	Nashville
Atwood, John	E-s	Denning
Austin, Russell H.	Ag-So	Mena
Autrey, John Lee	E-S	Columbus
Bain, James	A-F	Portland
Baker, George Felix	Ag-F	Stamps
Ballard, Eva Mae	H E-F	Gravette
Barrow, Julia H.	A-F	Forrest City

Name	Course	Home Address
Barrow, Margaret	A-J	Forrest City
Barry, William Taylor, Jr.	E-Sr	Fayetteville
Batten, John Tucker	A-Sr	Paragould
Bell, John Edward	E-Sr	Chidester
Bell, Lillian Grace	—Ed-F	Greenwood
Bell, Susan Thelma	A-Sr	Benton
Benton, Herbert England	A-F	Lonoke
Benton, Sidney Wright	Ag-So	Fayetteville
Berry, Robert H.	A-F	Marion
Best, Jewell Boyd	A-So	Basett
Bethel, Claude	E-Sr	Bates
Bird, Freda	A-S	Springdale
Bird, Milmo	E-F	Waldron
Bishop, Mark	A-F	Nashville
Black, Mayola	A-F	Clarendon
Black, Nye	E-s	Winthrop
Blackburn, Robert H.	E-s	Prairie Grove
Blackshare, James Osmer	A-Sr	Fayetteville
Blair, Cecil Clyde	A-Sr	Conway
Blanks, Aubrey Gregory	A-So	Hamburg
Blanks, Lane W.	A-J	Hamburg
Boles, Cherokee	A-S	Muskogee, Okla.
Bond, G. W.	—Ed-F	Summers
Bonner, Ed C.	E-Sr	Glenwood
Bowman, James Earl	Ag-F	Little Rock
Boyd, Drury Tillman	E-F	Fayetteville
Bradley, Mary Burnelle	A-So	Little Rock
Bradley, Maurice Marion	E-s	Fayetteville
Bragg, P. N.	A-Sr	Chidester
Branch, Samuel Houston	A-F	Branch
Branch, Hugh	U	
Brennan, Dorothy Catherine	A-J	Fayetteville
Brennan, Mildred Frances	A-Gr	Fayetteville
Brewer, Clarence Ulysses	E-F	Fayetteville
Brewer, William Myrtle	E-F	Fayetteville
Brewster, Laurence M.	A-F	Cane Hill
Brewster, Nannie Mildred	—Ed-F	Pine Bluff
Brewster, William Roe	A-F	Pine Bluff
Bridges, Blanche	H E-S	Parsons, Kan.
Bridges, G. R.	A-F	Kedron
Briscoe, Edith Imogene	—Ed-F	Harrison
Brockman, John August	E-s	Star City
Brooke, Paul Cecil	Ag-So	Springfield, Mo.
Brown, Bonnie Bess	—Ed-So	Charleston
Brown, Hazel	A-F	Fayetteville
Brown, Kathleen	A-S	Junction City
Brown, Leroy Walton	E-Sr	Ward
Brown, James Paul	E-s	Fayetteville
Brown, Robert Washington	—Ed-J	Adona

Name	Course	Home Address
Brown, Saira Hazel	A-So	Fayetteville
Buchanan, Henrietta Elizabeth	A-S	Fayetteville
Buckley, Florence E.	A-S	Little Rock
Buechley, Florence Estelle	Ed-F	Carlisle
Buford, Anna E.	U	
Buford, Elouise	A-F	Forrest City
Bunckley, Ransom	E-S	Hamburg
Burgess, May	Ed-F	Russellville
Burkett, Carl Cobb	E-s	Camden
Burney, Jim Berry	Ed-J	Green Forest
Burr, Edward Everett	Ag-So	Paragould
Burrow, Frederick Hiram	A-F	Altus
Byrd, Frank Monroe	E-s	Pine Bluff
Cabe, Mary Ethel	Ed-So	Rhea
Cabeen, Amelia	U	
Cabeen, Catherine Abney	A-J	Fayetteville
Calhoun, Irene	Ed-So	Cave Springs
Callahan, Jean Alice	A-F	Fayetteville
Callahan, Margaret Edna	H E-So	Fayetteville
Calloway, Jewell	Ed-F	Childress, Tex.
Cammack, George S.	A-J	Portland
Campbell, Bertha Frances	Ed-F	Bentonville
Campbell, Kate	Ed-F	Fayetteville
Campbell, Lota	U	
Campbell, Peyton	Ag-F	Augusta
Cannon, Arthur Rhea	Ag-F	Fayetteville
Cantrell, George A.	E-F	Bellefonte
Cantrell, Katherine	Ed-F	Bellefonte
Cantrell, William Martin	E-F	Bellefonte
Cargile, Louis Clare	A-Sr	Bentonville
Cargile, Will R., Jr.	E-s	Gurdon
Carl, Floyd Conkling	E-S	Siloam Springs
Carl, Isola Mary	A-S	Siloam Springs
Carmichael, Lenten	A-So	Little Rock
Carolan, Therman Lester	E-J	Booneville
Carolan, H. Clem	Ed-J	Fayetteville
Carroll, John Charles	A-J	Trull
Carroll, John J.	A-F	Charleston
Carter, Cecil Rolland	E-F	Springdale
Carter, James Irvin	E-So	Springdale
Casey, —	U	
Cates, Allen Wade	A-Sr	Boles
Chapman, William C.	Ag-F	Fayetteville
Charlesworth, Darwin	E-s	Fayetteville
Cheever, Edwin Head	A-S	Richmond
Chenault, Ella May	Ed-So	Fayetteville
Cherry, Rufus L.	A-F	Paris
Cherry, Robert Morris	E-F	Paris

Name	Course	Home Address
Childers, William Loftin	E-F	Newport
Chase, Minnie Warren	A-S	
Christopher, Freelin	E-F	Pine Bluff
Christopher, William Howard	A-S	Hot Springs
Church, Maury A.	E-s	Camden
Clardy, Richard Kelly	A-F	Malvern
Clark, Aura Clarence	A-So	Van Buren
Clark, Cecil L.	E-So	Malvern
Clark, Eula Charity	Ed-So	Goshen
Clark, James Ayres	Ag-F	Fort Smith
Cobb, Issie	Ag-F	Magnolia
Cochran, H. D.	U	
Cochran, Maurice William	E-So	Fayetteville
Cochran, Sidney Allan	A-J	Booneville
Coffey, Jewell Yvonne	A-S	Fayetteville
Coffield, Henry S.	Ed-s	Fordyce
Cognis, Annabel	A-S	Ashdown
Coker, Marion Barrow	E-J	Fayetteville
Collett, Esther	U	
Compton, Thomas Junius	E-S	Wing
Conway, Helen	A-S	Paris, Tex.
Constant, Hazel Ailleen	A-S	Van Buren
Cook, Edwina	A-F	Hot Springs
Cook, Eli T.	E-Sr	Fayetteville
Cooke, Jesse English	A-So	Little Rock
Cook, Jake M.	Ag-So	Fayetteville
Cooper, Harold Langford	A-So	Clarksville
Coppage, Jane	A-F	McAlester, Okla.
Costen, James Bray	A-J	Paragould
Courson, William Hershia	A-J	Hamburg
Coventon, John William	A-Sr	Oakland
Covington, Maxie	Ed-So	Fort Smith
Craig, Alfred Henry	A-F	Little Rock
Craig, Gladys Juliet	Ed-F	Hot Springs
Critz, Eileen Adair	A-S	Searcy
Crockett, Fred	E-J	Pocahontas
Croom, Adlai Stevenson	A-S	Oxford
Curnett, Hugh Anderson	Ed-J	Harrison
Daniels, John Buford	Ag-F	Dermott
Davenport, Dorothy	A-F	Vinita, Okla.
Davenport, Richard Ira	A-So	Eureka Springs
Davidson, Elmer Cruse	E-Sr	Shreveport, La.
Davidson, Gene	Ag-F	Fort Smith
Davis, Jeff	A-F	Little Rock
Davis, Minor Wallace	E-F	Ashdown
Decker, Kivikivia Leona	A-Sr	Fayetteville
Decker, Klerchia L.	A-J	Fayetteville
Delabar, Martin Thomas	E-F	Marvell
Derden, Jesse Homer	A-Sr	Austin

Name	Course	Home Address
Deroulhac, George Tappan	Ag-F	Fayetteville
Dickenson, George Dewey	Ag-F	Okolona
Dillman, James Arl	A-F	Paragould
Dinwiddie, James Anthony	E-Sr	Fort Smith
Dodd, George Kimber	Ag-S	Russellville
Dorr, Clyde Hudson	A-F	Jonesboro
Dotson, Ethel	—Ed-So	Fayetteville
Douthit, Jesse C.	E-F	Stephens
Dowd, Wallace Rutherford	E-So	Fort Smith
Dowell, Gladys Maymie	HE-F	Fayetteville
Dubs, Ford Harvey	E-J	Fayetteville
Duncan, Edgar Ernest	A-Sr	Waldron
Duncan, Irene	A-S	Fayetteville
Dunn, Henry Shibley	A-J	Van Buren
Dunn, John Howard	E-Sr	Fayetteville
Dyer, Frances Helen	HE-F	Fayetteville
Dyer, Julian M.	Ag-F	Fayetteville
Eld, Ellen Eva	—Ed-J	Bentonville
Ellington, Fred Merton	E-J	Monrovia
Ellis, Elizabeth	A-Sr	Fayetteville
Ellison, S. Herbert	A-F	Ola
Erganbright, Horace Russell	—Ed-F	Judsonia
Espy, A. Judson	E-F	Cabot
Estes, Ethel Lucille	—Ed-F	Corning
Faisst, Herbert	A-F	Bigelow
Faisst, Lena	A-S	Fourche
Felton, Lula Lee	A-S	Fayetteville
Fish, Roy Jason	E-F	Garnett
Fitzhugh, Alexander Stuart, Jr.	E-S	Augusta
Fink, Harry Browne	A-S	Fort Smith
Fisher, Merlin	A-So	Hazen
Fletcher, Amine W.	A-F	Little Rock
Flinn, Heber Howard	Ag-Sr	Little Rock
Flora, Ben C.	A-So	Brinkley
Ford, Clarence Beech	A-So	Sulphur Rock
Forrest, Leland Stanford	A-Sr	Siloam Springs
Forwood, Eleanor	A-Sr	Rogers
Fox, Leora	HE-F	Van Buren
Frazier, Elmer Homer	A-J	Havana
Freeman, Alice Lillian	—Ed-F	Marianna
Freeman, Alvy O.	E-s	Ashdown
Freeman, John H.	A-F	Mount Ida
Fulbright, Lucile	A-S	Fayetteville
Garrett, Claude Wallace	A-Sr	Huntsville
Gatewood, Hilda	—Ed-F	Vinita, Okla.
Gay, Hubert Madison	E-F	Little Rock
George, Ann Elizabeth	A-F	Dallas, Tex.
Geren, Jerry M.	Af-J	Fort Smith

Name	Course	Home Address
Geren, Louis Campbell	Ag-F	Fort Smith
Gerig, Francis Austin	E-Sr	Arkadelphia
Gibson, Ruth	A-Sr	Lake City
Gibson, Thomas Andrew	A-F	Black Rock
Gilbreath, Bernice	A-F	Fayetteville
Giles, Gregory Charles	Ed-F	Siloam Springs
Gill, Thomas Tapscott	A-J	Little Rock
Gilliam, Surrey Edgar	A-Sr	Lockesburg
Gilmore, Lucile	HE-So	Fayetteville
Gladson, Hazel	HE-S	Fayetteville
Gladson, Marion Lenore	A-Sr	Fayetteville
Goddard, Andy	E-s	Hartford
Gold, Marjorie Alice	A-F	Fayetteville
Gordon, Ruth Robinson	HE-F	Prescott
Goss, Alpha L.	E-Sr	Fayetteville
Goza, Henslee Dupuy	E-S	Pine Bluff
Grabiel, Ruth	Ed-F	Fayetteville
Graves, Hester Anne	A-So	Fayetteville
Gray, Julius C.	A-S	Guy
Greaves, Bernice	A-F	Fayetteville
Greaves, Clifton David	A-J	Fayetteville
Green, Edward G.	E-Sr	Helena
Greene, Louise Una	Ed-J	Fayetteville
Greenhaw, Franklin Karl	A-So	Fayetteville
Greenhaw, Mary Bryan	A-So	Fayetteville
Greer, Irving Mitchell	A-J	Wing
Gregg, Inez Pansy	A-J	Fayetteville
Gregg, Russell Cravens	A-Sr	Fayetteville
Greig, James Kibler	A-Sr	Van Buren
Hall, F. Preston, Jr.	Ag-S	Fayetteville
Hall, Willis Legette	Ag-Sr	Waldron
Hamby, Wells B.	A-F	Prescott
Hamilton, Paul Carroll	E-So	Hartford
Hamilton, Scott Downs	A-F	Fayetteville
Hammett, Richard Leonidas	E-F	Claremore, Okla.
Hanie, Arthur C.	A-F	Warren
Hannah, Paul D.	E-F	Fayetteville
Harding, R. Chester	E-S	Fayetteville
Harper, John Ashley	A-F	Pine Bluff
Harrell, Tracy Lee	Ag-S	Lewisville
Harrington, Alice	HE-F	Fayetteville
Harris, Arthur C.	A-F	Warren
Harris, Hadley	Ed-J	Fayetteville
Harris, Robert Dorsey	A-F	Fayetteville
Harvey, Robin	Ed-Sr	Booneville
Harville, Archie Watson	A-Sr	Augusta
Harville, William Emerson	A-So	Augusta
Hay, Walter Clifton	A-F	Mena

Name	Course	Home Address
Haynie, Ottis Richard	A-F	Prescott
Hazelwood, William Guy	E-S	Paragould
Heath, Irvin J.	Ag-So	Magnolia
Hedrick, Gideon Edward	Ag-F	Fayetteville
Heerwagen, Paul K.	Ag-F	Fayetteville
Heerwagen, Ruth M.	Ed-So	Fayetteville
Hellums, Clarence Shaw	A-S	Fayetteville
Hellums, Della Corrinne	A-S	Fayetteville
Hemphill, Mary Gertrude	Ed-F	Richmond
Henderson, Charles A.	Ag-So	Centerton
Hendrix, William Carey	A-F	Hamburg
Henry, John DeCator	Ed-J	Dierks
Henson, Glen Leroy	E-s	Fayetteville
Henson, John Alfred	A-So	Judsonia
Henson, Charles Thomas	E-s	Haskell, Okla.
Hester, Edna Adelle	A-Sr	Fayetteville
Hicks, Homer Wilton	E-J	Blue Jacket, Okla.
Higgs, Morton Thomas	E-J	DeQueen
Hight, R. L.	Ag-F	Mulberry
Hill, Fannie May	Ed-So	Nashville
Hill, Robert Franklin	E-S	West Helena
Hill, Willie Sue	Ed-So	Nashville
Hilton, Esther	A-J	Pueblo, Colo.
Hinds, Helene Lois	A-J	Fayetteville
Hitt, Bessie	U	
Hollabaugh, Gladys	A-F	Marshall
Hollett, Carol Ellen	Ed-F	Fayetteville
Hollingshead, F. W.	U	Fort Smith
Holmes, Odus Garfield	Ed-J	Harrison
Holt, Joe Berry	A-Sr	Harrison
Holt, Michelle Lafayette	A-Sr	Harrison
Hon, Mildred Foster	Ed-F	Fort Smith
Hooper, Orville Coreeve	A-So	Magazine
Hopper, David Claude	E-Sr	Caddo-Gap
Horner, John Clarence	Ag-S	Hot Springs
Horner, Justin Zena	A-S	Hot Springs
Horton, Gertrude	Ed-So	Arkadelphia
Horton, Horace R.	E-J	Fort Smith
Horton, Margaret	Ed-F	Ozark
Horton, William George	E-J	Fort Smith
Howard, William Napoleon	Ed-S	Danville
Howell, John W., Jr.	A-F	Fort Smith
Howell, Ruth Isabel	Ed-F	Foreman
Huber, Casper Albert	E-Sr	Weiner
Hudson, John Aquilla	A-S	Rhea
Hughes, Anna Irene	A-Sr	Fayetteville
Hughes, Donald S.	E-s	Fayetteville
Hughes, Jewell Constance	A-Sr	Fayetteville
Hunt, Ralph Berry	A-J	Dardanelle

Name	Course	Home Address
Hurlock, Blanche	Ed-F	Siloam Springs
Huston, Mary	HE-So	Fayetteville
Irby, Nolen Meaders	A-J	Booneville
Izard, Letha	Ed-Sr	Mountain Grove, Mo.
Jackson, John Mark	Ag-So	Magnolia
Jackson, William Henderson	A-So	Mena
von Jägersfeld, Evelyn	Ed-F	Hope
Jasin, Jacob	E-So	Pine Bluff
Jeffrey, Nina	U	
Jelks, Clarence Clay	Ag-So	Grays
Jobe, Dalton LeRue	Ag-So	Fayetteville
Johnson, Byron Everette	Ag-So	Waldo
Johnson, Nell	A-Sr	Hackett
Johnson, Scott	A-F	Fort Smith
Johnson, William Andrew	E-F	Hamburg
Johnston, Jacob A.	E-F	Ozark
Johnston, John William	E-s	Fayetteville
Jones, Annie Laurie	Ed-So	Clarksdale
Jones, Daniel Webster	Ag-So	Little Rock
Jones, Maurice Fuller	E-Sr	Batesville
Jordan, Kara	Ed-F	Fayetteville
Jordan, Pauline	A-Sr	Little Rock
Joyner, John Edward	Ed-Sr	Atkins
Keeney, Joseph Winfield	Ag-S	Fayetteville
Kennard, Rolfe Powell	A-Sr	Fayetteville
Kennard, William Shelby	Ag-F	Fayetteville
Kenney, James Stevenson	A-F	Van Buren
Ketchum, John Leonard	A-S	Stuttgart
Kindley, Ola	A-S	Gravette
King, Annie Marion	Ed-F	Texarkana
Kincaid, Charles N.	Ed-So	Fayetteville
Kitchens, Lewis Thomas	E-J	Paragould
Klausmeier, Ruth Marie	Ed-F	Cabot
Knerr, Irene	A-J	Fayetteville
Knoch, Elmo Albert	E-J	Fayetteville
Krone, Marie Ann	Ed-F	Fort Smith
Kuykendall, Samuel James	E-So	Fort Smith
Lake, John Pinnix	A-Sr	DeQueen
Lamberton, Mattie Carolyn	Ed-F	Harrison
Lambright, Geraldine	A-S	DeQueen
Lanford, Bessie C.	U	
Lanford, Nelle	Ed-So	Helena
Langford, Cooper Harold	A-So	Clarksville
Lanier, John Thomas	A-F	Forrest City
Lano, Mildred	Ed-J	Fayetteville
Lawson, Hugh Mortimer	A-So	Fayetteville
Leach, Luther Orland	A-S	Scranton

Name	Course	Home Address
Leake, Jerry Franklin	E-s	Junction City
Lee, Arthur Fuller	Ag-S	Little Rock
Lee, Arthur Wiley	A-So	Center Point
Lee, Lucas Snyder	E-J	Fayetteville
Lee, Robert Davis	A-Sr	Center Point
Lee, Wendell Douglas	A-J	Center Point
Leitzell, Velma Irene	A-F	Springdale
Lenow, Harrel Lake	Ag-F	Little Rock
Leverett, Donna	HE-F	Fayetteville
Leverett, Gorham V.	Ag-F	Fayetteville
Leverett, Horace	U	
Levey, Jewell Josephine	A-So	Celina, Tex.
Liebolt, Leona	Ed-F	Fayetteville
Lighton, Louis Duryea	E-S	Fayetteville
Lincoln, Adaline	Ed-J	Van Buren
Lincoln, Blanche	Ed-J	Van Buren
Lines, Edna	HE-S	Fayetteville
Liske, Edwin J.	A-F	Argenta
Locke, David Archibald	E-F	Rogers
Lockharte, Jayne Dorothe Isabel	A-F	Clarendon
Lohman, Grace Lillian	A-S	Prairie Grove
Lowe, E. B.	E-s	DeWitt
Lucas, Henry A.	Ag-F	Fayetteville
McAteer, James Thomas	A-F	Fort Smith
McBride, Berta	A-So	Fayetteville
McBride, John Edgar	A-J	Fort Smith
McCain, Dolph	Ed-Sr	Monticello
McCain, Melborne Galloway	A-J	Pine Bluff
McCartney, Norman Alexander	E-S	Fayetteville
McClurkin, Daisy	A-S	Stephens
McConnell, Willard Wilkinson	Ed-J	Charleston
McCoy, Aileen	A-So	Fayetteville
McCoy, Nora	HE-So	Fayetteville
McCulley, Icey May	Ed-Sr	Siloam Springs
McCulloch, Richard B.	A-Sr.	Little Rock
McDaniel, Vollie Burrus	E-F	Rogers
McDonald, Charles P.	A-F	Fayetteville
McDonald, Dorothy	A-F	Fayetteville
McDonald, Guy W.	A-So	Fayetteville
McDonald, Louise	Ed-J	Fort Smith
McGaughy, John Bell	E-So	Pine Bluff
McGill, Walter Greenfield	A-Sr	Chidester
McIlroy, Mertye Brooks	A-S	Fayetteville
McKinney, Ruth	Ed-J	Corning
McNair, Effie	A-So	Little Rock
Mackey, Minnie	Ed-J	Seymour, Mo.
Martin, Ray	Ag-J	Austin
Markle, Dane	E-F	Fayetteville
Marshall, Olive	U	
Mason, Walter	E-F	Augusta

Name	Course	Home Address
Massey, Joe Beal	Ag-F	Morrillton
Massey, Oliver Talmage	A-S	Black Rock
Mastin, Theresa	A-S	Fayetteville
Mather, Juliette E.	A-J	Fayetteville
Matthews, Jim P.	A-J	Horatio
Matthews, Ben Buford	A-J	Pine Bluff
Meadows, Coy Truman	E-s	Danville
Mealer, Roy	E-So	Hartford
Mendenhall, Ruby Theresa	—Ed-So	Rosston
Merrill, Walter Delno	E-So	Rogers
Metzger, Marion Rebecca	HE-F	Morrillton
Middlebrooks, Edna	—Ed-J	Hope
Middlebrooks, Pearl	—Ed-F	Hope
Milburn, Bryan L.	A-F	Fayetteville
Milburn, John Boles	E-So	Fayetteville
Mills, Clarence M.	E-F	Eufaula, Okla.
Milsap, Laura	A-S	Fayetteville
Milton, Joe Philip	A-S	Lonoke
Milton, Wallace M.	E-S	Ozark
Mitchell, Emmett Eugene, Jr.	E-So	Morrillton
Moncrief, Peyton David	A-F	DeWitt
Montgomery, Maynard G.	E-F	Fayetteville
Moore, Graham Belmont	A-S	Barren Fork
Moore, John Ike, Jr.	A-S	Helena
Moore, Luther Edgar, Jr.	Ag-F	Searcy
Moore, Lila Gertrude	A-Sr	Fayetteville
Moore, Lucille	A-J	Carthage, Mo.
Moore, N. F.	E-s	Warren
Moore, Vaughan Henry	E-S	Fayetteville
Morgan, Robert Elmer	A-F	Mena
Morton, Ruth	A-So	Fort Smith
Mulkey, Annie Hurl	A-So	Nashville
Munn, William Tracy	A-S	Rosston
Murphy, Henry Fulton	E-F	Pine Bluff
Murrey, Harry Eldridge	A-S	Texarkana
Murrey, James T.	E-S	Little Rock
Murrey, Joseph Hoffmaster	A-S	Little Rock
Myers, Carlton Brien	A-So	Helena
Myers, Jay Hamilton	Ag-F	Black Rock
Nelson, Edward Houston	A-Sr	Cauthorn
Nelson, Irene Henrietta	HE-F	Fayetteville
Nelson, Will Enloe	E-F	Fayetteville
Newman, Herbert Alexander	E-s	Little Rock
Newton, William K.	A-Sr	Russellville
Nichols, Gelene	—Ed-So	Ozark
Norwood, Ellen	A-F	Little Rock
Nunn, Henry Edwin	E-J	Blue Mountain

Name	Course	Home Address
O'Neal, Beatrice Virginia	A-Sr	Springdale
Oates, F. Bonner	Ag-So	Pottsville
Oliver, James William	Ed-J	Eureka Springs
Oneal, Ernest P.	E-F	Hope
Oneal, Lloyd E.	E-J	Rogers
Osborne, Virginia	Ed-J	Fort Smith
Oster, James Emmett	E-s	Rogers
Oster, Mabel Addie	Ed-J	Rogers
Overholt, Charles William	Ag-F	Brinkley
Overstreet, Elizabeth	A-F	Little Rock
Overton, Minnie Elgiva	A-So	Greenway
Owens, Alfred Rice	A-F	Greenwood
Palmer, Roy Clark	Ag-So	Fayetteville
Pankey, Blanche	U	
Pape, Frank Davis	E-So	Van Buren
Parchman, Oscar D.	A-S	Van Buren
Parke, Effie Pauline	Ed-So	Pocahontas
Parke, Mae Deatus	A-Sr	Conway
Park, Ora Agnes	Ed-So	Pocahontas
Parker, Elmo Lord	E-F	Cleveland
Parsons, Lloyd Chandler	E-Sr	Fayetteville
Payne, Elmer Raiford	E-F	Forrest City
Payne, Weston	E-J	Forrest City
Peden, Era Orchid	A-F	Wedington
Pendelton, Myrtle Louise	HE-So	Juction City
Perkins, Harry Edwin	E-F	Eureka Springs
Pettigrew, Helen Lyle	A-Sr	Charleston
Philips, Bess	A-Sr	Fayetteville
Phipps, Harvey	E-s	Fayetteville
Pitts, Louise	A-S	Russellville
Polk, Carmen	A-F	Fayetteville
Polk, Mary Linda	A-So	Fayetteville
Porter, Florence Edwina	A-Sr	Little Rock
Porter, Paul Leon	E-F	Galesburg, Ill.
Porter, William Haynie	A-F	Little Rock
Potter, Rissie Lois	Ed-Sr	Fayetteville
Pounders, Jeff	E-s	Star City
Poynor, Price Neff	E-s	Berryville
Pratt, Joy	Ed-Sr	Fayetteville
Price, Arthur Olin	A-F	Warren
Price, Oscar Gibson	Ag-Sr	Fayetteville
Price, Mrs. Susie	U	
Pringle, Everette	A-F	Pocahontas
Prothro, Roy Evan	A-So	Pinnacle
Quesenbury, Mont Key	A-F	Mulberry
Quaile, Beatrix	Ed-F	Fort Smith
Quiett, Fred W.	E-F	Augusta
Quiett, Robert	Ag-F	Augusta

Name	Course	Home Address
Raines, Mary Sue	Ed-F	Fordyce
Rainwater, James B.	Ag-S	Fayetteville
Rainwater, Sloan	Ed-F	Imboden
Ramsey, Marion Adele	A-F	Fayetteville
Randolph, Joseph Payton	E-So	Hot Springs
Rankin, Fay Swogger	A-F	Jonesboro
Rawlings, Troy Pindar	E-S	Judsonia
Redus, Frank Brown	A-Sr	Harrison
Reed, Laurence Neill	A-S	Heber Springs
Reed, Marion Capps	Ag-F	Fayetteville
Reed, Reuben	A-S	Fort Smith
Reed, Ward Irving	Ag-S	Fayetteville
Reese, Gladys	Ed-F	Center Point
Reeves, George Norris	Ed-F	Green Forest
Reichardt, Chris	E-F	Fort Smith
Rhea, Cannon A.	U	
Rice, Martha	HE-F	Bentonville
Rice, Philip	E-J	Bentonville
Ridling, Little	Ag-J	Mena
Rieves, John	E-s	Ashdown
Richardson, Byron McDonald	A-J	Paragould
Richardson, Julius Clifton	Ag-J	Fayetteville
Robertson, Mary Dale	HE-S	Marianna
Robinson, Guilford Allen	A-S	Western Grove
Robinson, Hale Henry	E-F	Hope
Robinson, Henry Evalyn	A-Sr	Jonesboro
Rodgers, Eunice Loraine	A-J	Fayetteville
Rogers, Clementine	Ed-J	Prairie Grove
Rogers, Guy Fred	E-So	Fayetteville
Rogers, Julia A.	U	
Romine, Hazel Ely	A-F	Judsonia
Ronie, Annie Josephine	Ed-So	Hamburg
Rosencrantz, Franklin Carl	Ag-J	Fayetteville
Rudd, James Thomas	A-J	Council Bluffs, Ia.
Rudolph, Freda	Ed-Sr	Fayetteville
Russell, Nona	A-S	Ashdown
Sadler, William Paul	A-J	Van Buren
Sailor, Lela Pearl	Ed-F	Bigelow
Sailor, Vance Laird	A-So	Bigelow
Sanders, John Frank	E-s	Fayetteville
Sanford, Bess Lee	A-F	Pine Bluff
Savage, Opal Frances	A-So	Carlisle
Scarlett, Winton C.	E-So	Russellville
Schwartz, Mrs. Benjamin	A-S	Fayetteville
Sears, Mrs. O. B.	U	Fayetteville
Scott, Mary Louise	HE-F	Prescott
Scott, Samuel Blake	E-F	Prescott
Scott, Sterling Price, Jr.	E-J	Little Rock
Scroggin, Jesse Knox	E-S	Morrillton
Scurlock, Stella	Ed-So	Piggott

Name	Course	Home Address
Shadrach, Will Sandefur	E-F	Jacksonville, Fla.
Sharp, James Edwin	A-So	Prairie Grove
Shell, Effie	Ed-So	Rosston
Shifflett, Joe Johnson	Ag-S	England
Shinn, Jarvis Bryan	A-F	Western Grove
Short, Gilbert Young	A-F	Maynard
Shults, John Brooks	E-F	Fulton
Simco, Allie	A-So	Fayetteville
Simms, Lucy Cassandra	A-F	Little Rock
Simpson, Floyd Blanton	A-S	Fayetteville
Sims, C. D.	A-F	Brinkley
Smith, Carr	Ag-F	Fayetteville
Smith, Earl W.	Ag-Sr	Fayetteville
Smith, Estelle	A-S	Stephens
Smith, Euclid Theodore	A-Sr	Amity
Smith, F. B.	Ag-So	DeQueen
Smith, Gladys	HE-S	Fayetteville
Smith, Harold Arthur	A-J	Monroe, La.
Smith, Henry W.	A-S	Tyro
Smith, May	A-F	Fayetteville
Smith, Myrtle H.	Ed-So	Waldron
Smith, Norman Mayhew	E-F	Pine Bluff
Smith, Oscar D.	Ag-J	Hamburg
Smyth, Edward	E-F	Fayetteville
Snyder, Bryan, Jr.	A-J	Rogers
Soule, Gertrude	U	Fayetteville
Sour, Stanley S.	A-F	Fayetteville
Southall, Richard Columbus	A-Sr	Marion
Sparks, John Paul	E-F	Fordyce
Speer, Jeff	A-F	Mount Ida
Spurlock, Walter	A-F	Jasper
Stanley, Woodruff	A-So	Ozark
Stansbery, E. E.	E-S	Little Rock
Stanton, William Alfred	A-S	Little Rock
Sternes, Bryan	Ag-F	Fayetteville
Stephenson, Ola	Ed-So	Timbo
Stevens, Bernice	A-S	
Stevenson, Ernest Edward	A-F	Pottsville
Stevenson, E. V.	E-S	Marianna
Stevenson, James Edward	Ag-So	Dardanelle
Stewart, Charles J.	E-S	Stuttgart
Stewart, George Clyde	A-F	Pine Bluff
Stewart, Jessie	Ed-J	Cave Sprng
Stewart, Reed	E-Sr	Three Creeks
Stone, Hilda Hough	Ed-So	Waldron
Stone, Marion	A-Sr	Fayetteville
Stratton, Mary Doris	A-So	Boulder, Colo.
Strickland, Crawford	Ag-S	Beebe
Stuart, George Beard	A-So	Texarkana, Tex.
Stuart, James Edward	A-So	Texarkana, Tex.

Name	Course	Home Address
Stuckert, Harry Eugene	E-s	Bigelow
Sullivan, Harry	A-F	Waldron
Sutton, Margaret	A-S	Fayetteville
Swilley, George William	E-Sr	El Dorado
Tankersley, Mary	HE-S	Pine Bluff
Tanner, Joe L.	A-So	Blytheville
Tanner, Mena	HE-F	Helena
Tarver, Vernon	E-F	Star-City
Taylor, Charles E.	A-So	Little Rock
Taylor, Coy	A-F	Marshall
Taylor, Irene Olcott	A-J	Paragould
Thaxton, B. B.	E-F	Fayetteville
Teague, Willie L.	E-s	Amity
Templeton, James B.	E-F	Fort Smith
Templeton, Robert C.	Ag-So	Fort Smith
Tennyson, Ruby Sadie	HE-So	Muskogee, Okla.
Terpening, William Henry	E-s	Prairie Grove
Terpening, G. Herbert	E-s	Prairie Grove
Thomas, Alvin Nelson	E-J	Amity
Thomas, Charles Oscar	E-s	Little Rock
Thompson, Jonah Isob	Ag-F	Rector
Thompson, Joe McKee	E-So	Warren
Thompson, Lilburn E.	E-Sr	Valley Springs
Thompson, O. C.	E-So	Fayetteville
Thurmond, Holmes A.	E-F	Shreveport, La.
Thweatt, James	A-S	DeValls Bluff
Tipton, Goodwin	A-J	Forrest City
Tollett, Mamie Jewell	A-F	Fayetteville
Torbett, Harry Eugene	A-S	Avoca
Torrence, Julia Lucretia	Ed-F	Fayetteville
Torrence, Lenna	A-F	Fayetteville
Trahin, Eugene	Ag-S	Fayetteville
Triesch, Conrad Rudolph, Jr.	E-F	Fort Smith
Trimble, James William	Ed-So	Osage
Trimm, Yide	Ed-S	Booneville
Turner, Adlai Stevenson	E-Sr	Lockesburg
Turner, Elmer	A-F	Branch
Turner, John Bradley	A-F	Branch
Upchurch, Frank Miller	E-s	Hackett
Uzzelle, Jack	A-So	Pecan Point
Uzzelle, Spencer Sennes	E-F	Pecan Point
Vance, James Harvey	E-F	Mineral Wells
Vernon, Irving James	A-F	Coweta, Okla.
Vineyard, Marion	A-S	Helena
Vineyard, Mittie Emily	Ed-F	Greenwood
Vineyard, Willie M.	U	
Volentine, Opie	E-s	Charleston

Name	Course	Home Address
Wachter, Virginia	Ed-F	Little Rock
Wakefield, George Edwards	E-So	Rogers
Wallace, Jerry	A-So	Russellville
Wallace, Pearl	A-F	Fort Smith
Walls, J. A., Jr.	A-F	Holly Grove
Walls, Louise	A-Sr	Holly Grove
Walker, Frances	A-F	Canon City, Colo.
Walker, Sue	HE-S	Fayetteville
Walker, Pauline Courtney	Ed-F	Muskogee, Okla.
Walkup, James H.	A-F	Havana
Ward, Margaret Elizabeth	A-S	Fayetteville
Warner, William Preston	E-So	Fayetteville
Warren, Charles I.	Ag-So	Black Rock
Watkins, Harold	A-F	Mount Ida
Watson, Damon Marie	Ed-J	N. McAlester, Okla.
Watson, Lois Elizabeth	A-J	Amity
Webster, Ima Green	Ed-So	Siloam Springs
Wells, George C.	E-J	Purcell, Okla.
White, Carita Agatha	HE-F	Montevideo, Minn.
White, Daphney Earl	A-S	Monticello
White, Eddie Sonora	A-J	Fayetteville
White, Emma Thetford	HE-F	Dumas
White, Tell Thompson	E-s	Pocahontas
Wiggins, Sam B.	A-Sr	Fayetteville
Wilkes, James Caswell	A-J	Star City
Wilkinson, Margaret Louise	A-So	Fayetteville
Willey, Charles C.	Ag-F	Wabbeseka
Willey, George W., Jr.	Ag-So	Helena
Willey, John Kimbrough	E-S	Helena
Williams, Ben Robinson	A-Sr	Jacksonport
Williams, Edna	A-S	Fayetteville
Williams, Kate Hardister	Ed-F	Jacksonport
Williamson, Jeanette	A-S	DeQueen
Willis, Louise Quinette	Ed-F	Winslow
Willson, Perry Lane	E-s	Hope
Wilson, Arthur Lee	E-So	Cabot
Wilson, Beulah Mabel	A-F	Rhea
Wilson, Donald Dean	A-J	Fayetteville
Wilson, Erwin LaFayette	E-F	Rhea
Wilson, James Freed	A-Sr	Ola
Wilson, Margaret	A-S	Fayetteville
Wilson, Margaret	A-S	Russellville
Wilson, Paul Witherspoon	A-F	Hope
Wilson, Tracy L.	U	
Wilson, William	Ag-F	Beebe
Winfred George Wood	Ag-F	Rudy
Winn, James Alexander	A-J	Russellville
Witt, Gibson, Jr.	A-F	Hot Springs
Wofford, Custer Alexander	E-S	Fayetteville

Name	Course	Home Address
Wohra, Har Das	A-Sr	Piro Shah, Gujrat, Punjab, India
Wolf, Lennie Rachel	Ed-F	Fayetteville
Womack, Vee	A-So	Hugo, Okla.
Wood, Hattie Mae	A-S	Ashdown
Wood, James Roscoe	A-So	Ashdown
Wooddy, Sue	HE-S	Fayetteville
Woodfin, Eugene Locke	A-J	Brinkley
Woods, Leon Perry	A-So	Fayetteville
Woolf, Cora Ethelyn	Ed-F	Bigelow
Wooten, William Richard	E-So	Russellville
Wortz, Dorothea	A-S	Fort Smith
Wozencraft, Anna Jeanette	Ed-So	Fayetteville
Wyche, Pat	Ed-F	Lonoke
Yancey, Clarence Guy	Ag-S	Fayetteville
Yancey, Neva	U	
Yeager, Hugh L.	E-So	Hope
Zoll, Allen Alderson	A-F	Fayetteville

Total Enrollment-----724

TRAINING HIGH SCHOOL

Adams, Lois
Adams, Nell

Baskins, Clara
Baskins, Gray
Bell, Aileen
Belknap, Ray
Boyd, Bernice
Boyd, Raymond
Brumfield, Roy

Cline, Kenneth
Coffey, Elizabeth
Coffey, Opal
Collett, Esther
Cox, Mack
Crockett, Charles
Crockett, Elizabeth
Curtice, Anna Del

Davis, Edna
Davis, Greta
Deane, Katherine
DeRoulhac, Jean
DeRoulhac, Paul
Dowell, Ruby
Dyer, Ruth

Earle, Baylis
Elliott, Dora
Eoff, D. R.
Eoff, Leah

Hamilton, Georgia
Harris, Notley
Harris, Oma
Hayes, Ralph
Hayden, Stanford
Henson, Tom
Hickey, Ada
Hunt, Raymond
Hutchinson, Lois

Irby, Annie
Irby, Pettie May

Jeffery, Nina
Jordan, Grace
Johnson, Edgar
Johnson, Ernest

Liebolt, Weldon

McGill, Tate
McGraw, Bab
Millsap, Laura

Pool, Alice
Porter, Ruby
Price, Mrs. O. G.

Ramsey, Eugene
Ragsdale, Gails
Richardson, Fount
Richardson, John
Roberts, Gertrude
Robinson, Chloera
Robinson, Loena
Rudolph, Jane

Sanders, Mary
Sherrod, Jessie
Stansberry, E. E.
Stockberger, Emmett
Stuckey, Willy

Taylor, Edward
Taylor, Virta
Teeter, Gladys
Teeter, Hazel
Tilly, Lena

Waters, Guy
Willis, B
Wheeler, Irene
Williams, Dorothy

Total-----72

DEGREES, DIPLOMAS AND CERTIFICATES

JUNE, 1914

MASTER OF ARTS

Cheever, Eleanor Louise	Kunz, Gladys
Lawson, Alva Lillian	Coleman, Nelle (1913)
Gaughan, J. E.	(1913)

BACHELOR OF ARTS

Adams, Elizabeth	Hopper, Ira Clark
Armitage, Marguerite	Jordan, Mary E.
Banta, Katherine	Keller, Fred
Barton, Flora Alma	Lake, Edward Clay
Berry, Margaret Wheeler	Laser, Lucile
Bird, Nelle	Metcalf, Roy James
Blackmun, Ora	Mixon, Harey D.
Blackshare, Dean	Morehead, M. Louise
Boyd, Frances Leone	Moss, Mildred Mills
Brennan, Mildred Francis	Potter, H. N.
Carroll, Hugh A. Dinsmore	Potter, Mabel Melissa
Casey, Walter Burton	Potter, Winnifred Kathryn
Croom, Sam Gaston	Schoolfield, Eunice
Davenport, Bessie	Scurlock, Edward Holmes
Funk, Gladys A.	Shelton, Wilmer Loy
Henry, Elbert Augustus	Shuffield, Newton Ernest
Hollabaugh, Essie Annah	Stockberger, Robert Roy
Hon, Mabel Fairfax	Trent, Lillian Ruth

Winfrey, John Simon

Class of 1911.

Tompkins, Charles H.

Class of 1913.

Roark, Granville Wade, Jr.	Mills, Edmund Fitzgerald
Williams, Maurice	Davis, Robert Lee
Moss, Lowell W.	Barton, William Harvey
Newberry, Jacob Lawrence	Daniel, Lucy May
Torrence, James Harold	

CIVIL ENGINEER

Carter, Hugh	Cruze, Grant
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BACHELOR OF CIVIL ENGINEERING

Adams, Noah	Payne, Elbert Earl
Dowdle, Robert Garland	Ratliff, Emmett Marshall
Estes, Guy Daniel	Titus, Ira Ralph
Magness, Perry G.	

Class of 1911

Droke, Albert Hill

BACHELOR OF ELECTRICAL ENGINEERING

Dunn, Homer Walter	Roys, Marco Benjamin
Graham, Jesse James	Volentine, Paul
Kennedy, Walter Earl	Wolf, Watt Horton
McGill, Sidney Smith	Collins, Albert James

BACHELOR OF MECHANICAL ENGINEERING

Buerkle, John George Adams	Dunn, William Augustine
McGill, Minto	

CERTIFICATE IN MECHANICAL ARTS

Moody, Julius Clark

BACHELOR OF SCIENCE IN AGRICULTURE

Baker, Maybin Steele	McPherson, Ralph
Berry, Benjamin Marvin	Potter, Rissie Lois
Dyer, Cyrus Leavitt	Quick, William Cecil
English, Elbert Hartwell	Tyson, Harvey Jewell
Keith, Allen A.	Tucker, Mosely Clarence

CERTIFICATE IN AUTOMOBILE TRADES COURSE

Schoolfield, John L.	McCormick, Thomas E.
----------------------	----------------------

CERTIFICATE IN CIVIL ENGINEERING

Dabler, Fred Herman

CERTIFICATE OF LICENTIATE OF INSTRUCTION

Arnold, B. C.	Kimbrough, Ethel
Bird, Nelle	Lide, Kate
Carroll, Hugh A. Dinsmore	Middlebrook, Ida
Constant, Mabel	Morehead, Louise
Cordell, Thyra	Moore, Lyda
Coventon, Bessie	Oliver, Grace
Davis, Lucile	Owens, Marion
Davenport, Bessie	Potter, Mabel
Forrest, Grace	Shell, Bennie
Gibson, Ruth	Stuckey, Helen
Gregg, Pansy	Scott, Ellen
Greig, Agnes	Taylor, Vena
Goodwin, Idahugh	Trent, Lillian Ruth
Hurlock, Leslie	Watson, Lois
Izard, Letha	Williams, W. D.
Kilgore, Vesta	

DIPLOMA IN EXPRESSION

Hon, Mabel Fairfax	Bird, Nelle
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CERTIFICATE IN PIANOFORTE

Green, Una	Cheever, Lucy
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Maple Street

Arkansas Avenue

Coulson Avenue

Dickson Street

CAMPUS UNIVERSITY of ARKANSAS

- 1 Ella Cornell Hall
- 2 Peabody Hall
- 3 Chemistry Building
- 4 Green House
- 5 Agriculture Building
- 6 Extension Office
- 7 Experiment Station
- 8 Hospital
- 9 Hill Hall
- 10 Gray Hall
- 11 Buchanan Hall
- 12 Bath House
- 13 Shops
- 14 Engineering Hall
- 15 Dairy Building
- 16 Transformer
- 17 Grand Stand
- 18 Residence Foreman of Farm
- 19 Barns
- 20 Bleachers
- A.B.C.D. Tennis Courts

Track

Athletic Field

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